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Dr. J. Mazyck
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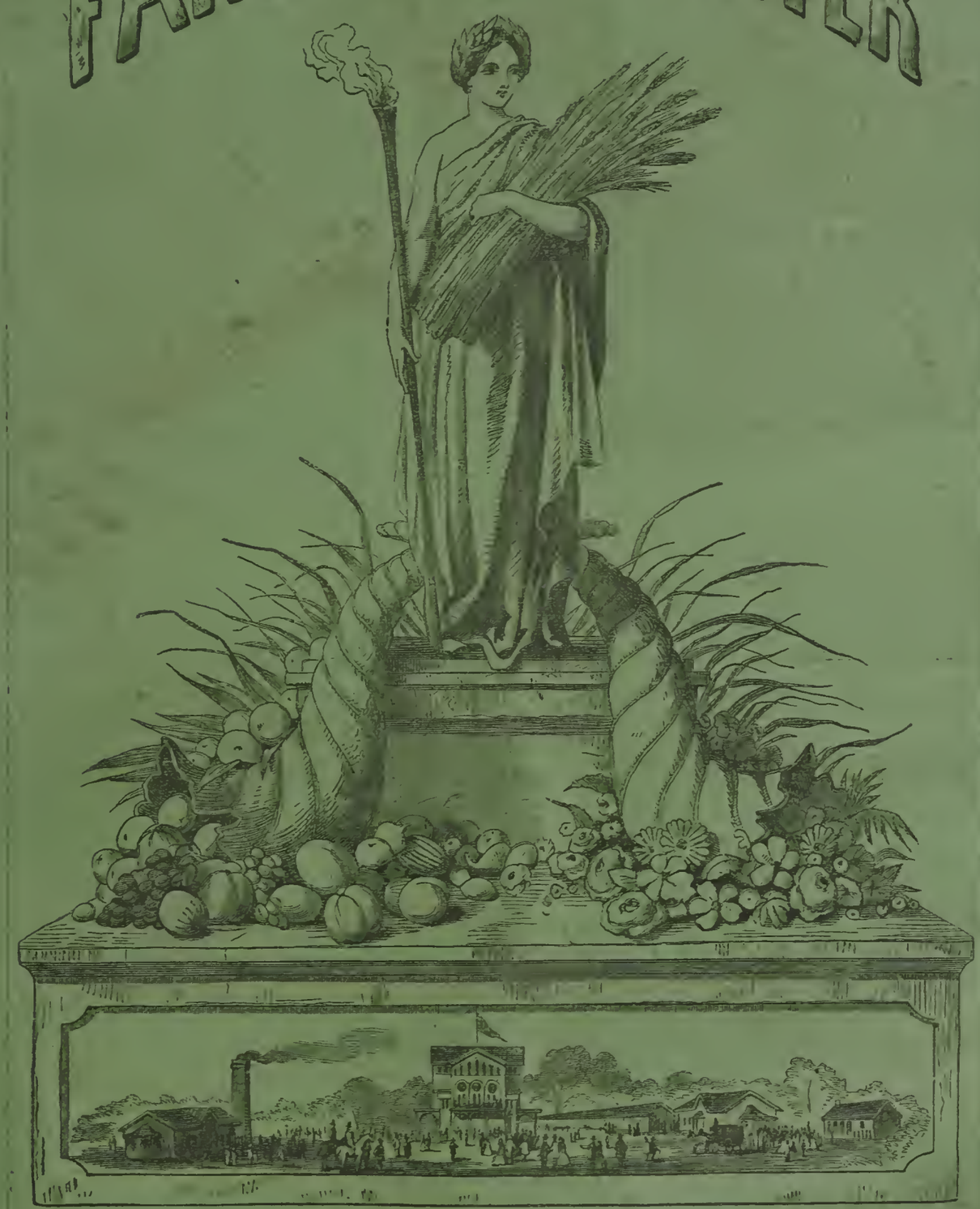
Vol. XI., No. 7. JULY, 1860. New Series, Vol. 2., No. 7.

THE FARMER AND PLANTER



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CONTENTS OF JULY NUMBER.

OUR ADVERTISEMENTS.

The small number of advertisements for this number will not warrant us in issuing our usual advertising sheet, consequently we have crowded all we can into the pages of the cover. Nothing short of four pages of *paying* advertisements will remunerate us for issuing an extra sheet for that purpose. We would here bring to the notice of our readers the fact that we have not, nor do we intend to, infringe upon our 32 pages, monthly, of reading matter, either by advertisements or any other matter not legitimate to the objects for which the journal is established. As we are compelled to leave out one or two advertisements, we have thought it our duty to give the reasons why they do not appear.

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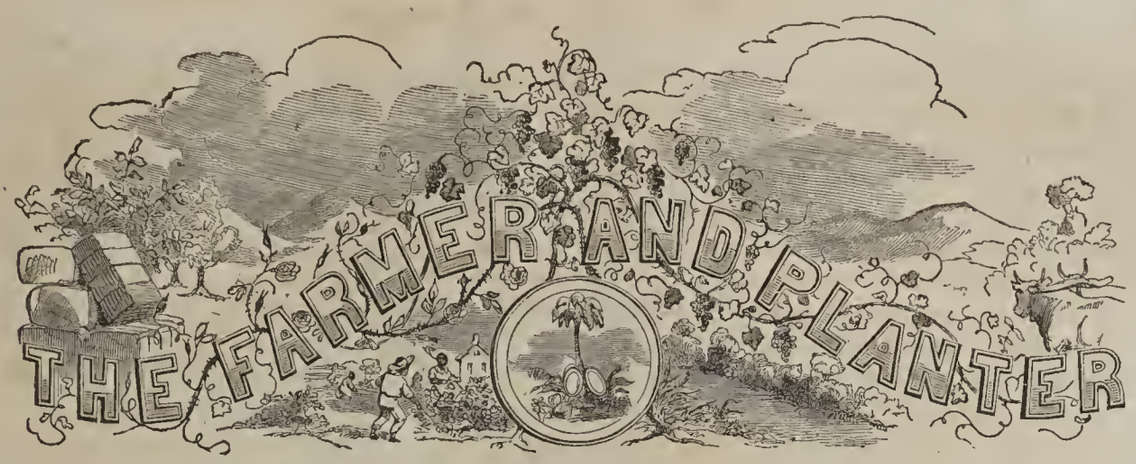
May, 1860 5—2t



VOL. XI. JULY, 1860. NO. 7

R. M. STOKES, Proprietor. COLUMBIA, S. C. NEW SERIES Vol. 2, No. 7

ON THE RECLAMATION OF INLAND SWAMPS AND ITS EFFECTS UPON HEALTH AND AGRICTLTURE.

An Address, delivered before the Black Oak Agricultural Society, by J. D. PORCHER, ESQ.

Mr. President, and Gentlemen:—In entering upon the task which your kindness has assigned me, of seeking for and suggesting something which may, perehance, redound to the benefit of our Society, I have endeavored at the outset to take an enlarged, unprejudieed and truthful view of the condition of our country, as respeets climate, fertility and eondition of soil, and amount and condition of labor, being the three elements on whieh the mind of the planter must work, for his own prosperity and the benefit of humanity; for, as has been truly said, "in no profession is humanity at large more interested than in that of agriculture," and, I will add, no profession so honest, for "in no way is wealth so directly created as by the cultivation of the earth." To attain my object, I have instituted a comparison, to the extent of my ability and limited opportunities, between our present condition and that of our ancestors, of other portions of our State and of our sister States; and think I have discovered that our first great derideratum is Health.—There is no disguising the fact, that we are the recipients of annual and endemic visitations of disease, which we attribute to malaria, and which produce fevers, dysenteries, &c., followed by hepatie affections, dropsies, and general debility, fatal to the white man, and more or less injurious and deteriorating to the negro (Dickson's Essay on Malaria). While I am informed by intelligent and reliable acquaintances, who have visited, and by residents of, Georgia and Florida, that the same absolute necessity for removal from plantations during the summer, does not there exist, and we know that it does not in our own State, fifty miles from the seacoast. Now, none of these people deny the fact, that in certain localities fevers and agues are likely to be contracted, but the evil does not exist to the extent of a prohibition of residence for the white man. The habit, in southern Georgia and Florida is for the overseers always to live on the plantations, even where the owners, for better health and society, assemble in villages. And such is the case throughout the South-western States. The Mississippi swamp, through all its length and breadth, is being filled rapidly by emigrants from every section of the world. The steamers, which penetrate every navigable stream, are said to be filled with passengers every month of the year. How comes it then that so much of Carolina, a province which was represented near two hundred years ago as "a rich jewel, which it had pleased God to add to the crown of his king," should be lying an abandoned waste, and that we who occupy a well cultivated section are forced to abandon our houses during one half of the year? Unquestionably, it is owing to the existence with us of some ærial poison, which our medical profession and our own experience and observation are "unanimous in regarding as the result of vegetable decomposition in moist places, and at a high temperature," whatever may be its origin elsewhere, and however ignorant we may be as to its nature, qualities, and mode of action.

But let us look further into the causes which determine a climate, and see if there be any in the power of man to modify. We find that there are two general causes on which the climate peculiar to any country principally depends. 1st. Its distance

from the equator, and 2d. Its altitude above the level of the sea. But their effect is generally modified by many circumstances exerting a partial influence—as the configuration and extent of the country, inclination and local exposure, nature of soil, and even the changes produced by cultivation, (*Brandes Encyclopœdia*).

As regards 1st cause, geographieal position, we being in a higher latitude, have a right to expect a better climate than southern parts of Georgia, Florida, and the south-western States. Black Oak is above the latitude of Barnwell C. H. and the middle of the above named States. Pineville and Eutawville are but a few miles below that of Aiken; to which place many of our planters resort in summer, at great inconvenience and expense, (and are still well repaid for their trouble;) which proves that health can be enjoyed in our latitude, and that we must look to other causes than geographical position, for the source of the evil.

As regards 2nd cause, viz: Altitude. I have no means of comparison with other States, but as compared with some more healthy localities in our own, ours are deficient, but not to the extent to occasion such a difference. The allowance of a diminution of 1° Fahrenheit Thermometer for every 100 yards of ascent, being given as a rule of sufficient approximation, would give Columbia but a slightly lower temperature; it being some two hundred and thirty feet above tide water—Black Oak is between fifty and sixty. But the fact, that a higher altitude is not necessary to escape the effect of malaria, is proved by a removal to the pinelands, only a few miles distant, and sometimes of actually lower altitude.

3d. The configuration of our country, from its vicinity to the sea, and distance from snow-capped mountains and icy plains, which so sensibly effect the temperature of the winds, ought to secure us a milder and more equable temperature than that of the upper portion of our own and the adjoining States. To none of the three general causes which determine a climate can the evils existing in our country then be attributed. There must, consequently, be some modification of one or all, arising from some local cause. That this modification is owing to the changes produced by cultivation, can, I think, be made to appear at least probable, by a comparison between the present condition of the country with that as described by the original settlers. After passing through the hands of Spaniards, French and English, Carolina was finally granted (1662 by Charles II, after whom it was named) to eight Lord's Proprietors, who proceeded forthwith to colonize it (B. R. Carroll's Collections). The first description of the province I have been able to find, bears date 1666, in which the author, after describing the appearance of the country, soil, &c., says—"Last of all, the air comes to be considered, which is not the least considerable to the well being of a plantation, for without a wholesome air all other considerations avail nothing, and this it is which makes this place so desirable. The summer is not too hot, and the winter is short and moderate, best agreeing with English constitution." The 2d account bears date 1682, in which the climate is thus described: "Such who in this country have seated themselves near great marshes, are subject to agues, as those are who are so seated in England, but those who are planted more remote from marshes or standing water, are exceedingly healthy, insomuch that out of a family consisting of never less than twelve persons, not one hath died since their first arrival there, which is nine years. But, what is more, none hath been sick in all that time—nor is there one of the masters of families, that went over in first vessel, dead of sickness in Carolina, except one, who was seventy and five years of age before he came there. Though the number be pretty considerable, divers persons who went out of England phthisical and consumptive have recovered. The women are very fruitful, and the children have fresh sanguine complexions. The air is of so serene and excellent a temper, that the Indian natives prolong their days to the extremity of old age."

A third account, written by Gov. John Archdale, in 1717, gives a very similar description of the climate.

In 1731, Peter Perry, the founder of Perrysburg, on the Savannah River, wrote from Charleston to his countrymen, of Switzerland, urging emigration, and said: "South Carolina is not only seated in the same degree of heat, fertility and temperature of air, (which is about 33 degrees of latitude,) as the Isle of Candia, Syria, China, and, in general, all the best countries in the universe, but is the only country the English possess that is situated in that degree. And there is every reason in the world to believe, that if there be now an opportunity to have lands for nothing this advantage will not continue long."

Such, gentlemen, were the descriptions given of our now almost depopulated section; such were the hopes raised, and, what is more, such were the hopes realized by our ancestors. Up to this time the Colony had not prospered to the extent of these promises and its capacity, owing to their ignorance of the country, the labor of settling, and the mis-

management of the proprietors. And to avoid revolution it was purchased by and passed under the government of the crown (1719). From hence we see a most rapid increase of emigration, production, importation of slaves, commerce and credit.—"Lands rose in value, men of foresight and judgment began to look out and secure for themselves the richest spots, with that ardor and keenness which the prospect of riches naturally inspires."—Hitherto they had been principally engaged in the exportation of deer-skins, furs, naval stores and provisions, and in raising stock—all healthful occupations, and the white man had been able to undergo the labor. The magnificent forests protected him from the heat of the sun, and prevented injurious exhalations from the earth. The waters wended their ways slowly but surely into the rivers and sea, and left no stagnation in the rear. The undergrowth, burnt by the Indians from time immemorial, to encourage the deer and trace the foot-prints of their foes, presented no barrier to the purifying and invigorating winds of heaven. The country was, as it were, just from the hands of its Creator, and man had not commenced his work of desolation.

But a new article of consumption, and a most profitable commodity, had been introduced about 1700, of which I quote Gov. Glen's account: "A brigantine, from the Island of Madagascar, happened to put into the Colony. They had a little seed rice left, not exceeding a peck, which the Captain gave to a Mr. Woodward; from a part of this he had a very good crop, but was ignorant for some years how to clean it. It was soon dispersed over the province, and by frequent experiments and observations, they found out ways of producing and manufacturing it to so great perfection, that it is said to excel any other rice in value. The writer of this hath seen the said Captain in Carolina, where he received a handsome gratuity from the gentlemen of that country, in acknowledgment of the service he had done the province." Experience soon proved that the rich moist lowlands were most congenial to the production of this grain, and the wonderful energy and wisdom with which the planters entered its cultivation, is proved by the fact, that in less than fifty years, after one peck had been brought into a wilderness, 100,000 barrels were exported to every country in Europe. (Dr. Hewit's Historical Account of Carolina). But did we not have these statistical accounts, the works which have been left in every swamp, and throughout all their ramifications, would show that our now deserted inland swamps were indeed, as considered, "the golden mines of Carolina." At a later date, when the advantages of irrigation and more thorough drainage were better understood, and the superior fertility of the tide swamps and marshes were discovered, and the labor necessary for embanking was supplied, the inland swamps were abandoned for the cultivation of these lands and of indigo, which was at this time introduced, or rather discovered, to grow spontaneously in the Province (1745—Dr. Hewit), and which promised and yielded immense profits, with less labor, and from a different kind and more abundant soil—the indigo delighting in a rich, light loam.

And now, gentlemen, I think I have at least brought you to the origin of most of the evils of climate, from which we are now suffering: for I find in Dr. Brahms report of the state of trade and the plantations in Carolina, (Published by Mr. Weston, for Charleston Historical Society,) made under the Royal Commission, and bearing date June, 1772, this account of the climate, and causes for its condition: "As much as those constructions of dams (made to reserve water for inundating the rice-fields after the first hawing or weeding,) testifie to the great skill, industry and improvement of this province, and as much as they contribute to their opulence, so much the corrosive vapors of these stagnant waters, evaporating and mixing with the air, become prejudicial to health by cloking the stomachs of the inhabitants with slyme and corrupting their blood, from whence different disorders, as agues, fevers and relaxations, are brought as well upon the Europeans than African descendants, unless they moderate their imbibed corrosive vapors by a prudent and moderate use of spirits; but 'tis only to be understood from pure, wholesome spirits, for if they are otherwise, they produce other diseases, &c.; but since these carefully alkoolified spirits are not to be obtained without great skill and trouble, so the preventing the evil proceeding from the corrosive vapors, for the generality must be committed to futurity, when the province will be more open and cleared from its woods, to give greater and unobstructed passages to the ranging winds, which will extenuate and scatter these vapors to the air, so that only an inoffensive small share can be imbibed by those who breed upon it."

Again, Dr. Hewit, who wrote in 1779, says:—"Though Carolina lies in the same latitude with some of the most fertile countries on the globe, many local circumstances concur to occasion a difference between it and Palestine, &c. Besides the black mountains, frozen lakes, and large uncultivated territory, over which the N. and N. W. winds blow in

winter, by which rendered dangerous, when the extreme heat of summer is united with a low marshy soil, where the water stagnates, and the effluvia arising from it thicken and poison the air, it must prove the occasion of a numberless list of fatal distempers. This last circumstance seems to decide the healthiness of climates in every latitude." Dr. Milligan, who published an account of the diseases in and around Charleston, 1770, wrote to the same effect. It would appear, then, gentlemen, from the extracts quoted, and from our own experience, that the country was, one hundred years after first settlement, and is now, in a more unhealthy condition than originally found; and that the medical profession and common observation of that period, attributed the whole evil to the same causes, as the more enlightened profession of our day do. But I may here be asked did not Georgia and Florida pass through the same system of culture, &c.? Why the difference in the effects produced? I find they did not. The settlement of Georgia was not projected until near (1732) seventy years after, and then under different auspices. Slavery was prohibited (until near 1760) during the period our inland swamps were so profitably cultivated, and almost up to the introduction of cotton, and certainly to that of indigo; consequently, those lands were never, to any extent, subjected to the wet culture.—Florida was in the hands of the Spaniards, who were always more intent upon robbing their neighbors than improving their country, and is consequently now a new State. If it be a fact then, that the climate of our country has suffered from the introduction of the rice culture, it would appear a natural sequence for it to improve under its total abandonment, but such would not be the case, I think.

Rice is now confined to the lands intended for its culture, and it appears highly probable that they have been placed in a better sanitary condition, under the present beautiful system of drainage and cultivation, than when subject to the continual tidal flowings. And again, it seems an established fact, that immediate vicinity to rivers has been proved more healthy than situations further removed.—The negroes under my management have certainly not enjoyed as much health as those of my relatives, on Cooper and Ashley Rivers, showing, it would appear, that the injury does not arise from the mere presence of pure water and evaporation therefrom. A remarkable circumstance is, that while we discover an increase of malarious diseases, and while we attribute them to the effect of heat, moisture, and vegetable decomposition, we discover a diminution in the quantity of rain, and a lower range of Thermometer in the last hundred years. In Gov. Glen's history the mean average depth of rain which fell from 1737 to 1748 was 46.912 inches. According to journal kept by the Secretary of this Society, (Mr. Thomas P. Ravenel,) the mean average depth, from 1846 to 1859, has been only 43.02 inches.—The mean annual ranges of Thermometers from the same journals have been respectively 65.50 and 63.09. The presence, then, of this insidious enemy must be accounted for from the existence of some local cause—some change in the physical condition of the country. Such probable causes do exist—such changes have taken place. Bayous, swamps, creeks, were intended as the natural vents for the discharge of the superfluous water of a country.—But every swamp in lower South Carolina has been banked across, for the retention of water. In the change to the indigo and then cotton culture, no care was taken to restore the water to its natural courses; and in abandoning the fields the reserves were in many cases retained for milling purposes. Every other Southern State has been settled and cleared up originally and exclusively for cotton, which is emphatically a dry plant: consequently, every effort has been made to get rid of water—the bane of its successful production. While, on the contrary, a brief survey of our particular section of country will show the fact that our plantations are almost literally the knolls of a huge reserve, with only some great leaks. The whole forms a flat inclined plane, sloping towards Cooper River, which, by means of the numerous swamps, penetrating every direction, is the natural drain to the ocean. But at the junction of these swamps with the river a water-lock is placed, and a wide canal extended, with the earth all thrown out to retain the surrounding water for the supply of this canal, and this system is carried out for twenty odd miles, from Cooper to Santee river, damming up every water course as it passes by, and forming reserves, covering many hundreds, and probably, from first to last, thousands of acres of land. Again, I find that all the water which falls on the scope of country embraced in the arc of a circle, drawn from a few miles below Pineville, along the dividing ridge between upper and Lower St. Johns, and down to Pinopolis, after being delayed by dams across the leads at almost every quarter of a mile, is all finally concentrated into one canal between Somerton and Wantoot, which in its turn is blocked up by the Santee canal running across its course at almost right angles. I would, therefore, gentlemen, most earnestly recommend procuring possession, if possible, of the

Santee Canal, and the converting of it into a drain, which would, I think, prove of ample capacity.—and thus a great work might be made to accomplish a second and unforeseen end, and one not less important than that for which it was intended. I have been unable to procure any statistics, so I have had to take the mere assertion of the fact by several reports made to the Royal Agricultural Society of England, that large and extensive sections of country have been made healthy by thorough systems of drainage, in that country. A gentleman, living in the Dismal Swamp of North Carolina, told me, that as the drainage had progressed, they had been able to remain there later in the summer. In Abbeville District, the planters of a beautiful and fertile section, known as the Flat Woods, were formerly driven off every summer by the ravages of chills and fevers, but they now remain there with safety; the change being attributed to the opening of the creeks to secure the bottom lands, and to the better ventilation of the country by extensive clearings.

That drains are by the enlightened world considered necessary sanitary reformers in moist climates, is proved by Charleston expending her hundred thousand dollars in constructing them, after a full investigation of the whole subject of hygiene. Now, if the flood-gates to these main and sub-main drains, penetrating the city, were closed for a season, would the city not be considered in a worse condition than before they were dug? Such, to my view, is precisely the condition of our country—every main and sub-main drain placed by nature has been obstructed. As well might a man draw a cord tightly around one of his limbs, and expect free, healthy circulation, as for us to enjoy our full meas- of health under the existing state of things.

I do not assume the position that we would ever be able to reside permanently on our plantations, but I do argue that our time of residence might be lengthened. The health of the whole pine land region might be increased, and the condition and comfort of the negro much ameliorated. On this point I have had some very encouraging experience. Ophir had the reputation of being, and was, in reality, the most sickly plantation of this section. As it was the only plantation which had a mill-pond, I argued that it was more than probable that the pond and the sickness were cause and effect, and accordingly pulled up the flood-gates and sacrificed a valuable saw and grist mill. Since then it has enjoyed a full share of health with those around. The old miller, in whose family the office, for all time, had been an hereditary one, regretting, I suppose, the loss of his perquisites and easy regular life, reproached me with a good deal of asperity for breaking up my father's work, but his voluntary testimony next winter was, that he had never been so free from asthma. A neighbor, living above, a man of intelligent observation and shrewdness, has since considered the value of his property very much enhanced.

I have thus, gentlemen, dwelt, at very considerable length, on one portion of my subject: believing health to be the first essential to agricultural prosperity, and that the means which have been recommended for attaining that end would place us far on the road to pecuniary prosperity. And here I would ask, can we not, and will we not, be the pioneers in the laudable effort of restoring our country to at least its pristine healthfulness? Why should we not reasonably expect results corresponding to the efficiency of the work, and indulge the hope, under God's blessing, of receiving a full compensation for our labor?

It has been asserted that there is too much work for our means, but after mature deliberation, I think not. *Any country, which has settled itself elaboratcly with the whip-saw, and has prepared all its cotton for market with foot-gins, can drain itself, of after the introduction of machinery has relieved it these laborious operations.* It might not do so in one or two, but it certainly can in five or ten years. Less labor than the bank at Mexico has consumed would, I think, drain us into Cooper River, considering the amount already done to hand. To prove how much can be done *by undertaking*, I saw our worthy and energetic President, in one season, canal, clear and cultivate, from sixty to seventy acres of heavily timbered swamp land, and harvest therefrom forty odd bushels of grain per acre. In the same length o time, my neighbor of White Hall and myself, with an average at the work of not over twenty hands, dug a canal from three to seven feet deep, ten feet wide, and three thousand feet long, through a dense forest—the daily tasks per hand not averaging over 250 cubic feet. Extra care and food being extended, they came out of the work rather improved than injured. But I have used only one argument in favor of attempting at least the reclamatien of our swamps. Their value, as provision lands, will now be considered.

There are, in the possession of members of this Society, thousands of acres of land not returning them one cent of profit, and lying, I think I have shown, worse than idle, every acre of which is reclaimable, as there is a fall of from three to six feet per mile, increasing as you travel up, and the reach of Santee canal, into which it would naturally flow, is twenty feet above high tide in Cooper

River. The opinion has prevailed I know, and perhaps does prevail, that these lands will not pay for the labor of draining; they will not produce more than two or three full crops. This is, no doubt, an hereditary opinion, derived from the old rice planters, who abandoned them on that account, for rice culture; but as I have never discovered any old ditch more than one foot and generally not over six inches deep, I would suggest that none of us are entitled to an opinion as to their productive capacity. A piece of land which I know has never, for over one hundred years, felt any respite from the hoe or the hoof, produced the two past years an average of near twenty-five bushels of grain besides quantities of pumpkins, and has now on it a most promising crop of oats, with what we now consider very imperfect drainage and rough culture.

In the extensive works of drainage recommended for the benefit of this section, I would invite the cooperation of our Cooper River neighbors. They certainly get only a very small portion of the rain, and I might almost say, none of the spring-water intended for their use. The thousands of gallons of spring-water evaporating every day under a summer's sun, would, I must think, add many bushels to their harvests, if conducted down in straight and narrow leads, which would at the same time give them the benefit of our most moderate showers. To my St. Stephens friends I would suggest the practicability, if necessary, of banking in the river swamp land on all sides, to avoid both river and highland water, and discharging that which falls within, by means of flood-gates and pumps, worked by steam-engines, so placed as at other times to carry on other plantation operations. This would effectually remove the water which rises in the land from percolation during freshets, and probably render them congenial for short cotton. I have had the pleasure of seeing one operating most successfully on one of the old abandoned rice plantations in St. Pauls, now owned by Mr. Dwight, who, for the benefit of the State at large, will, I hope, prove a pioneer in the work of returning to culture and habitation that formerly rich and splendid, but now abandoned region.

So much for our undeveloped provision resources. Since the introduction of guano the belt of pine land, running through our middle country from east to west, has risen wonderfully in value and productive capacity. Ours, off the line of railroads, is still lying idle and valueless. Whence the cause? I suspect it would puzzle a chemist to detect any difference in their vegetable, mineral, or chemical structure, whilst we know that one is rolling and consequently dry, and the other flat, low, and consequently water-clogged. The system which I have suggested for the production of health and provisions, would introduce this character of land to cotton culture.—Such is the porosity of sand and the inclination of water downwards, that the effect of drainage is felt a long distance through such a country.

I know not what other suggestion, with my limited knowledge of their particular section, I might give to my friends in Upper St. John's, than to make a bold strike for the Four-hole Swamp, which, as located on the map of the State, is their natural vent, and within reach, as a means of creating a value to, and bringing into cultivation, this description of land, and at the same time removing the back water, during wet spells, from some already in culture. The use of lime, too, I find so universally recommended throughout the agricultural world, as to demand further experiment in a section where it is so abundant at hand. But we are all cotton planters, consequently the bulk of our time, labor and manure, ought to be devoted to its culture, which has not been altogether the case; for such has been the difficulty of raising provisions on our limited quantity of worn and grassy lands, that by the time they were secured, there was but little of either left for cotton. Trying to raise both by the same system of culture has caused a diffusion of a limited amount of manure over such a large area of land, as to render it almost worthless; and the consequence is, our lands have not presented us with the abundant harvests which the laborious system of manuring, pursued for the last twenty years, ought to have done. *But this has been owing, in a great measure, to the universal ignorance of the science of agriculture*, which has pervaded the American continent, and the misguidance which has been given to the would-be-informed, by badly directed chemical experiments and their consequent fallacies. At one time it was supposed that vegetable offal contained all the elements of fertility; and the collection of it has been pursued with such industry and energy, as will rival comparison in the bulk of manure accumulated by our planters, with that of any other cultivators of the soil, in any section of the world. Mr. Coke himself, to whose splendid system of agriculture we were so eloquently invited at our last meeting, considered fourteen cart loads of manure per acre liberal; thirty, very heavy. Many of our planters even put from thirty to fifty. Again, every crop fence has been removed, under the idea that our fathers, in their ignorance, had put the finishing stroke to the work of destruction, by allowing stock to range upon their lands. We

let all of ours, not in use, grow up in broom sedge, and then into pine saplings, and at the expiration of ten or twenty years, clear, for the second time, laboriously, cultivate laboriously, but make only one, or, at most, two good crops, and then find the land where it was when first turned out. Experience on these two points, gentlemen, must force the conviction that *vegetable matter alone cannot work up land to any high degree of fertility;* else, why are not all of our forests of surpassing productiveness? We know that some, with an accumulation of centuries of vegetable deposits, are hardly worth the clearing. While, on the contrary, *we see that one quart of guano*, a highly concentrated animal manure, will produce, *on most lands, a more marked effect than a cart load of leaves.* But it must not be inferred from this little episode, that I esteem vegetable matter as an entirely worthless element in the renovation of land; for I do not. I am only unwilling to attach undue value to it, and thus delude ourselves with the idea that in hauling out unaltered pine trash we are manuring our lands, to any great degree. I esteem it a most valuable vehicle for holding, protecting and carrying out both the solid and liquid portions of our animal excrements, and probably as a mechanical agent in shading the land, when applied in spring and summer to the surface; nor would I be understood as recommending a reckless system of pasturing. Were I to rest land for one or two years, I should prefer stock of all kinds exeluded; but could I extend the resting beyond that period, knowing the value of stock and the value of animal manure, I would, if practieable, pasture the land; if not for its own advantage, for that of the stoek, and those lands in permanent culture. I have, for several years, been impressed with the necessity of concentrating and strengthening our manure, to avoid the aetual labor consumed in hauling it in and hauling it out, and for this purpose have gradually enlarged my pasture, until it has enabled me to pen all the stock every night during the summer, and at the same time keep them not in an existing, but in first quality beef-killing, milk-giving, eondition. The pasture now contains about two hundred acres of cleared, and from fifty to a hundred acres of wooded land, (the latter contributing but little beyond shade, as stoek never feed in it after the first budding of the leaves,) and it has supported, in first rate condition, from forty to fifty head of cattle, about the same number of sheep and hogs, and several mares with colts, from the 1st of April to 1st November. The cattle and sheep were penned every night: with such an improvement to the appearanee of the manure heap, as to warrant the application of not more than thirty and as little as twenty loads of manure per acre, aeeording to the quality of the land, and with, I think, as favorable returns as those of my neighbors, who put thirty-six. This experienee, with the faet that the stock of hogs have almost doubled their former number, will warrant my reeommending an increase of pasture to the full extent of idle land, as the cheapest mode of collecting dung, and the abandonment of the habit of turning out your stoek during the summer, and thus losing all this dung, and bringing them in only during the winter, to glean really valuable matter from the eultivated fields.

And here I will state, as the result of close observation and experience, that it will not pay to fence in wood on very low, wet, miry land; in the first place, it requires too many acres per cow; and second, they will not thrive if confined entirely to such pasture. Every day the stock pass over the luxuriant herbage of the swamp as long as a blade of the more saceharine grass of the Highland ean be found.—And I have never seen any abandoned clearing in the pine woods suffered to grow up, where there were any cattle in the range; proving, I should say, that the poorest cleared land furnishes better pasture than the more fertile wood land.

But this is only one mode of collecting one item of domestic manure, to the value of whieh, over all other kinds, Prof. Sheppard has very kindly directed the attention of farmers, in an Essay read before the Medical Association of South Carolina, at its last meeting, in whieh, at the risk of appearing unprofessional, he advises against too mueh reliance upon guanos and all artificial manures, as the supply of the one is unquestionably destined to an early exhaustion; and the others are too unreliable, and when pure, should be applied with some caution. But upon common farm-yard manure, he advises strong and faithful relianee, as the mine in which is to be found their prineipal wealth. But for further light as to its value, and information as to the mode of collecting and preserving it, I take pleasure in referring you most earnestly to the essay presented at our last meeting, as the most valuable and reliable paper I have been able to procure from any souree. Availing myself of its facts and figures, I would, however, recommend a more speedy applicatiou of the remedy in one respect. We find that the habit of the eountry has been, with an average of one mule or horse to every six and a half ($6\frac{1}{2}$) hands, to cultivate seven and one-third ($7\frac{1}{3}$) acres per worker—man and horse—of eotton and provisions; and that it requires one seventh of the market crop, or an average of twenty-four acres of cotton from each plantation, to buy

the meat for the negroes—provisions raised being only sufficient for them and animals, while Lord Coke, in England, for fifty-seven (57) laborers kept thirty-three (33) horses or yokes of oxen, and cultivated an average for the two of eleven and one-ninth acres per laborer. Now it strikes me that, as we do not make more cotton than we can gather, nor more money than necessary to support ourselves and the institutions of the country, and as land is much cheaper than labor, and already in our possession, it would be better to cultivate this one-seventh extra, but let it be by animal labor, and in provisions, as he suggests. A small addition of this kind of labor would do it almost the first year, and quite afterwards, with the provision he has made for saving the manure. Large planting has, I am fully aware, been the curse of the American country, and should be deprecated; but it has been principally large cotton planting, and that, with most stupid improvidence, in wasting manures. A horse is an expensive luxury and an expensive laborer; but an increased number of the latter might be introduced into the country with profit, and at the same time lower the proportional expense of feeding the whole. It has been our habit to keep so few, that they have had to labor every day through the year, and consequently had to be fed out of our barns every day. Now we ought to make such crops as will keep every hand busy during the short harvest season, when, by a judicious arrangement, the animals might feed themselves. On the last day of August I turned ten head of horses and mules, four oxen, ten calves, and a large stock of hogs on twenty-five acres of peas, from which all ripe at that time had been picked, and they supported themselves well until the middle of October, when they ought to have been turned into the corn-field, but there was none fenced off, so they had to be fed until the 1st November, when the corn was harvested, and they again supported themselves until cotton-picking was completed. The mules worked at the gin every third day, and improved.—I have long thought that *the reason we do not make a snrplus of provisions is, that we do not plant for a surplus*. The yield per acre is very good, a few more would not reduce it much. We have the land, and if we would only avail ourselves of it, we would, I have no hesitation in saying, from personal observation, find resources and fertility fully up with, if not beyond the average of the rest of the State.—But, for the production of cotton, there is something beyond this mere fertility necessary. Taking corn as the basis of fertility, our most fertile lands are by no means our best cotton lands. They must have congeniality—not so much the possession of elements to produce vigor and growth, as the absence of those elements pernicious to the retention of fruit. Hence, for a return of cotton lint, we must look more to the condition than the fertility of the soil. I think I have never seen a crop in this section, that had received proper culture, which was too deficient in size to produce the small amount of lint we are in the habit of gathering, or that would not even have produced a very heavy yield, could it have retained all the fruit formed during the growing season; in other words, as compared to the rest of the State, I see no evidence, from the appearance of the cotton plant, of a want of fertility. The question for us to solve, it stikes me, is how to bring about such a healthful condition of the plant as to enable it to derive the full benefit of the fertility in the soil, which we are continually and very wisely striving to increase. Experience has proved that, after good stands have been procured, few seasons have been found too dry and warm for the healthy maturity of cotton, which is, I find, in consonance with the chemical theory, that, as the plant advances to maturity, the softer parts, which contain an abundance of starch, are converted into lignin, or woody fibre, by giving off certain equivalents of water. Now this is the critical period that decides the fate of the cotton crop. If the earth and atmosphere are not in a state to enable it to part with this water, it must retain it, cast off the fruit which was intended for its more matured state, and continue its growth. This uncongenial condition of these elements is produced, 1st. By excessive rains, so saturating the earth as to prevent its further absorption of water from the plant; and, 2d. In a more dry season, by great heat from the sun, creating unusual evaporation, and causing the diffusion of so much moisture through the atmosphere, as to prevent the plants giving off the necessary equivalents of water from their leaves. Now it is evident that the sun and rain, the elements producing these effects, are beyond our control; but is it not possible so to regulate the element upon which they act—the earth—which is man's sphere of action, as to modify their influence and render them subservient to our purpose? The advocates of thorough and improved drainage say this can be done, and by the use of a very simple instrument—a common earthenware tube, known as the drain tile—one of which I have procured to show the fact that it is a very simple instrument to have worked the revolution in agricultural production, which it is claimed to have done.

It would, gentlemen, give me great pleasure to follow out with you the history of this most important subject, from the time when, as early as 1650, old Capt. Walter Bligh "first had the sagacity to distinguish between the transient effect of rain and the constant action of stagnant bottom water, in maintaining land in a wet condition," and in a published work, recommended "deep draining trenches to drain away that under-moisture, filth and venom," to that of the introduction of tiles, when the importance of the subject had so forced itself upon the public mind, as to induce the British Parliament to pass an Act in 1846, authorizing "The advance of public money to promote the improvement of land by works of drainage," to their subsequent introduction into America, 1835, by Mr. John Johnston, of N. Y., and spoken of by Emerson, (Mass.,) as "Political Economists;" so many young Americans announcing a better era, a day of fat things."—(French's Farm Drainage.) Believing that they are fast becoming agricultural necessities, and their use with us, to a greater or less extent, only a matter of time, as they are said to be as cheaply made as bricks. I will not trespass further upon your attention, than to give a mere synopsis of the benefits arising from tile-drainage, on such lands as need them, (for it is not argued that all lands want drainage,) from reports made before the British Parliament. Their effects are said to be both mechanical and chemical; the mechanical are as follows: 1st. Drainage deepens the soil. 2d. Assists pulverization. 3d. Prevents surface-washing. 4th. Lengthens the season. 5. Prevents freezing. 6. Calls for no open ditches—which saves 25 per cent. of labor. 7. Lightens the work. 8. Hauling and cattle-feeding are done without injury. 9. Grass and noxious weeds are more easily killed in cultivation of crops.—Chemical effects are as follows: 1st. Drainage promotes absorption of fertilizing substances from the air. 2d. Supplies air to the roots of plants.—3. Warms the soil, for the sun cannot warm a wet soil, because the soil is rendered cold by evaporation, and heat will not passd ownwards in water.—4th. Improves the quality of crops; and, lastly—Drainage prevents drought. These propositions are startling, and apparently contradictory, but they have been proved reconcilable and true, by the only sure test—the gain of the Almighty Dollar—not only in Europe, but in all our Northern States; where the use of tiles is becoming very general; and if so, they certainly demand a part of our attention and capital.

My conviction, gentlemen, may be wrong, but is certainly strong, that, if our State is ever again to experience internal support and prosperity, it must be first through our middle and low country level and alluvial lands. Her formerly abundant up-country is now in a fearfully denuded and gullied condition, and must continue so under the cotton culture. No hilly country can be for all times a cotton region. The cultivation of grain and grass, and the raising of stock may, and no doubt will, in after ages, restore it all; but, in the meantime, she must look to us for sustenance. Let us then cheerfully, hopefully and promptly enter upon the responsible destiny, always remembering, however, that wealth and temporal prosperity avail nothing unless accompanied with blessings from our Maker.

In conclusion, gentlemen, allow me to return my affectionate thanks for the complimentary position you have assigned me this day. The effort to fill it has been a labor of love; for I know no stronger wish than the prosperity of this, my own, my dear, my native land.

BAREFOOTED NOTES ON SOUTHERN AGRICULTURE.

BY AN OLD GRUMBLER.

NO X.

THE POA SUB FAMILY—(CONTINUED).

14. *Dactylis Glomerata.*—Clustered Dactylis—Orchard grass of America—Cocksfoot grass of England.

A perennial grass, native of Europe, but now generally diffused throughout the United States.—It is of great value both as a grazing and hay grass. It is best to sow it mixed with Red Clover (*Trifolium pratense*) for permanent pasture, and for mowing this plan is admirably adapted, as it matures at the same time. It is not a great exhauster of the soil. It should, for pastures, be sown very thick, which prevents its forming bunches or tussucks.—It is of quick growth, and is speedily reproduced after being cut or eaten down, so much so that the lines of Virgil may be literally affixed to it:

"Et quantum longis carpent armenta diebos
Exegua tantum gelidus vos nocte reponent."
Georg 2, 201.

"Cold dews restore beneath night's transient hours,
All that the herd each livelong day devours."
Sotheby.

In addition to this luxuriance, it thrives well in the shade of trees, and is thus admirably adapted for wood and enclosures. We do not despair of seeing it extensively cultivated at the South for grazing purposes. It seems to be well adapted to follow small grain, and we would always mix it with

half a staud of Red Clover seed, on lands suited to the latter.

15. *Poa Pratensis.*—Spear grass—Green grass—Smooth Meadow grass—In Kentucky, and the United States generally "*Blue Grass.*"—This is the grass whieh Muhlenburg termed the "*optimum pabulum,*" being the most valuable of all the grasses of our pastures. It varies in appearanee, aecording to the eongeniality of the soil upon whieh it is grown. In Kentueky it found a natural soil adapted to its growth, whieh renders grazing better there than in any eountry of the world. In lands where Blue Grass abounds, it requires no seeding; the proper preparation of the land is all that is necessary. It is well suited to rieh open woodlands, and make on sueh a tolerable show, even without the aid of lime. We have seen beautiful lawns in various parts of the South, made entirely from the use of this grass. A good mixture for a Southern lawn is Kentueky Blue Grass, White Clover, and Bermuda Grass. The two former may be introduced by using the seeds at the rate of 10lbs per acre, and the latter by roots originally planted every four feet apart. The White Clover and Blue Grass make a fiue winter earpet, and when they shrink before the heats of summer, the Bermuda is in its greatest luxuriaucc. A union of these grasses alone makes a permanent lawn in the South. Pastures stocked in the same way would be equally valuable. The Blue Grass is found generally diffused over our Southern eountry. It is diffieult to proeure genuine seed, as seeds men usually sell the "Blue Grass" of England (*Poa Compressa*) instead.

16. *Poa Compressa.*—Blue Grass of England—Flat stalked meadow grass.—This is a pereunial grass, resembling the above, admirably adapted to upland pastures, affordiug rieh nutritious pasturage, aud very valuable, but not generally introdueed.—Its ereeping roots are remarkably tenaeious of life, which reuders it a desirable grass for sheep walks and dairy grazing. Both *Poa Compressa* and *Poa Pratensis* are European grasses.

17. *Festuca Elatior.*—Tall Fescue—Meadow Feseue.—A glabrous foreign perennial grass, of great value, found commingled with *Poa Pratensis* (Blue Grass) in good soils, but is easily distinguished from that plant by its tapering, slender-poiuted, shiniug leaves. It is extensively naturalized, and soon finds its way into rieh pasture lands. We have a few native speeies of Festuea, but they are all worthless.

18. *Bromus Secalinus.*—Chess—Cheat—Brome Grass.—Here we have a worthless foreigner, which has *stumped* the natives. It has erept in amongst our wheat aud rye, and generally appears for a year or two in the same field after a grain erop, but beiug an anuual is soon smothered by weeds and ranker grasses, and almost entirely disappears.—The fallen seeds remain until the ground is broken up and sowed in a winter crop, whieh puts it in a favorable state for their development. The cure for chess or cheat is to sow pure uuadulterated wheat or rye seed. The vulgar errors as to the transformation of wheat to chess has attracted so mueh attention from agricultural writers, that I deem it useless to reiterate the impossibility of sueh a botanieal vagary, inasmueh as both speeies are well defined and will produee like from seed sown. Another species of this worthless grass, *Bromus Racemosa,* whieh is upright in its habit, and two native varieties, are all alike valueless, and great pests wherever they infest eultivated fields, devoted to the growth of wheat aud rye. It is strange that the "chess faneiers" have not detected this grass in oat and barley fields. It is nevertheless found in abundanee amongst these grains.

19. *Ceratochloa Breviaristata.*—Short awn horn grass—Rescue grass—Iverson grass.—This famous grass flared up on the agrieultural horizon a few years since, and, like every humbug, has had its day. It is said to be a native of the Paeific eoast of North Ameriea—now extensively and profitably naturalized on the prairies of Texas, where, for winter and early spring, it furnishes the best of grazing. Here the winters are too eold to constitute it a good winter grass, and it is ripe by May, so that its duration is too short to make it valuable. It is a true *Bromus,* and, for pasturage, is about as valuable as rye. It does not require seeding on land where it is once well set.

20. *Arundinaria Macrosperma.*—Cane.—Our whole Southern eountry was once overspread with "*Switch Cane,*" whieh furnished the best winter range for grazing animals. The eane-brakes of the South, both on high land and rieh alluvial bottoms, have been the greatest euriosities to the botanist, and presenting the gramineæ in its most gigantie form, is worthy of a passiug classifieation. The eane frequently seeds, and its grains, in appearanee like coarse rye, may be ground, when it makes a eoarse flour, not unpalatable, but highly nutritious. In seasons when it seeds, the eanes are bent to the earth like heavy headed wheat, and when ripe, all animals fatten readily upon it. Cane rapidly springs up on lands protected from the ineursions of stoek, aud extends both by seeds aud ereeping fleshy roots.

As winter pasturage it is valuable, and every angler knows its practical adaptation to his wants.

21. *Lolium Perenne.*—Ray Grass or Rye Grass —Darnell.

22. *Lolium Italicum.*—Italian Ray Grass.—Both valuable perennial grasses, admirably adapted to rich lands and high farming. They are fine plants for soiling, and yield 50 per cent. of their green weight in good nutritious hay. A great deal of the latter species has been distributed in the United States, and it will soon be a naturalized plant.

For the Farmer and Planter.

Mr. Editor:—Knowing the deep-rooted prejudice entertained by many against Agricultural Societies, and the little confidence by others as to the utility of all such associations, the following synopsis was prepared for the benefit of the Winyaw and All Saints Agricultural Society, and at their request, is now offered for publication in the *Farmer and Planter*, if deemed by you of sufficient general interest.

It shows what progress has been made in the two field crops, of most value to this particular section, and demonstrates one fact conclusively, which is, that increased care and attention to all the details of preparation, planting and cultivation, is the great secret of increased production. Plant less and cultivate better, is the advice of all experience in agriculture. Especially is it true in rice culture that overplanting and a slovenly cultivation is pernicious to the *succeeding* as well as the growing crop—a double reason then for following the advice of experience.

The Winyaw and All Saints Agricultural Society was organized in 1842. Premiums were offered for Stock in 1843, and for the Field Crops in 1844.

From non-compliance with some of the requisitions, the premium for the largest product of Rice was withheld in 1844, and the premium for the largest product of corn on 5 acres, was awarded to the late Col. P. W. Fraser; but the minutes of the Society are defective, inasmuch as the quantity made to the acre are not specified. Since that period, however, the following synopsis may be relied upon as accurate:

TABLE 1ST—RICE.

1846. Largest yield on 10 acres—52½ bushels per acre—Col. J. J. Ward.
1847. Largest yield on 10 acres—69 3-11 bushels per acre—Dr. E. T. Heriot.
1849. Largest yield on 10 acres—89½ bushels per acre—Col. J. J. Ward.
1850. Largest yield on 10 acres—87½ bushels per acre—J. H. Tucker.
1851. Largest yield on 10 acres—75 18-32 bushels per acre—J. H. Tucker.
1852. Largest yield on 10 acres—82 25-32 bushels per acre—J. H. Tucker.
1857. Largest yield on 27 acres—58⅛ bushels per acre—J. H. Tucker.

In 1851, Mr. J. H. Tucker realized 59 bushels, 3 pecks, 7½ quarts per acre, from 104 acres, and in 1849, from 521 acres, the same gentleman harvested 30,256 bushels—being an average of a little more than 58 bushels round, and considered the best crop, from so large a body of land, on record, in this District. Of the 521 acres stated, 12 acres yielded 973½ bushels, or the rise of 81 bushels per acre.

TABLE 2D—CORN.

1846. Largest yield on 10 acres—32 bushels per acre—Col. J. J. Ward.
1847. Largest yield on 10 acres—52½ bushels per acre—Col. J. J. Ward.
1848. Largest yield on 5 acres—64 3-32 bushels per acre—Col. J. J. Ward.
1849. Largest yield on 5 acres—73 9-32 bushels per acre—Col. J. J. Ward.
1852. Largest yield on 5 acres—46½ bushels per acre—J. H. Tucker.
1856. Largest yield on 5 acres—101¾ bushels per acre—Joshua Ward.
1857. Largest yield on 5 acres—48 1-16 bushels per acre—J. H. Tucker.

It will be observed that premiums have not been noted annually. They were offered each year by the Society, but the competitors declined exhibiting, when they failed to show an increase over their last awards, excepting when the *seasons* were unfavorable, and the product considered good under the circumstances existing. It will be seen that the corn crop, however, was raised from 32 bushels to 101¾ per acre, and that the rice was from 52½ to near 90 bushels per acre.

The question may now be asked, has the Rice and Provision crops of the District generally, *the aggregate*, been at all increased, since the organization of the Winyaw and All Saints Agricultural Society? We answer in the affirmative, most decidedly, as to the Provision crops. The system of upland culture has undergone a very manifest improvement within the past 20 years, and, we think, is still progressive. A neater cultivation cannot be found anywhere than on some of our Rice plantations. The introduction of various machines has facilitated and ameliorated the application of manual labor, and we are of opinion that the Agriculture of this District is, at this time, in a very prosperous and wholesome condition. The seasons

have certainly undergone a change—the springs are later and colder—the fall or autumn earlier and cooler—the summers shorter and altogether less favorable for Rice culture. But being sensible of these changes, our best Rice planters have long since abandoned the *routine* system, and have very judiciously attempted to modify their culture according to the seasons, by which, we believe, they will be able to keep up an average crop. In conclusion, Mr. Editor, allow me to add that the Winyaw and All Saints Agricultural Society has upon its list upwards of fifty subscribing members from all parts of the District, and at their last Anniversary Meeting made the following election of officers for the ensuing year, to wit:

President—Ex-Gov. Allston,

Vice-President—Dr. John D. Magill,

Recording Secretary and Treasurer—Dr. J. R. Sparkman,

Corresponding Secretary—P. C. J. Weston,

Curators—Col. J. H. Read, B. H. Wilson, S. T. Gaillard.

J. R. S.

From Herbert's new work an Horses, Horsemanship, &c.

IMPORTANT HINTS TO BREEDERS OF HORSES.

Now, as to what constitutes value or excellence in all horses. It is, indisputably, quickness of working, power to move or carry weight, and ability to endure for any length of time; to travel for a distance with the least decrease of pace; to come again to work day after day, week after week and year after year, with undiminished vigor. And it is scarcely needful to say, that under all ordinary circumstances, these conditions are only compatible with the highest condition of physical health of the animal. Malformation must necessarily detract from speed and power; hereditary disease or constitutional derangement must necessarily detract from all powers whatsoever. Under usual circumstances it would hardly be necessary to undertake to show that quickness of working, or in other words, speed, is necessary to a high degree of excellence in a horse of any stamp or style, and not one iota less for the animal which draws the load or breaks the glebe than for the riding horse of the pleasure traveler before light vehicles. But it has, of late, become the fashion with some parties to undervalue the advantages of speed, and to deny its utility for other purposes than for those of mere amusement; and as a corollary from this assumption, to disparage the effect and deny the advantage of *blood*, by which is meant descent through the American or English race-horse, from the oriental blood of the desert, whether Arabian, Barb, Turk, Persian or Syrian, or a combination of two or more, or all of the five.

The horse which can plow an acre while another is plowing half an acre, or that which can carry a load of passengers ten miles while another is going five, independent of all considerations of amusements, taste, or what is generally called fancy, is worth twice as much to his owner as the other.

Now, the question for the breeder is simply this: By what means is this result to be obtained? The reply is, by getting the greatest possible amount of pure blood, compatible with size, weight and power, according to the purpose for which he intends to raise stock, into the animal bred. For, not only is it not true that speed alone is the only good thing derivable from blood, but something near the reverse is true. It is very nearly the *least* good thing. That which the blood horse does possess is a degree of strength in his bones, sinews and frame at large, utterly out of proportion to the size or apparent strength of that frame. The texture, the form and the symmetry of the bones, all in the same bulk and volume, possess double or nearer four-fold the elements of resistance and endurance in the blood-horse that they do in the cold-blooded cart-horse.—The difference in the form and texture of the sinews and muscles, and in the inferior tendency to form flabby, useless flesh, is still more in favor of the blood-horse. Beyond this, the internal anatomical construction of his respiratory organs, of his arterial and venous system, of his nervous system, in a word, of his constitution generally, is calculated to give him what he possesses, greater vital power, greater recuperatory power, gregter physical power, in proportion to his bulk and weight, than any other known animal—added to greater quickness of movement and to greater courage, greater endurance of labor, hardship, suffering—in a word, greater (what is called vulgarly) game or pluck than will be found in any other of the horse family.

But it is not to be said or supposed that all blood horses will give these qualities in an equal degree; for there is as much or more choice in the blood horse than in any other of the family. Since, as in the blood of the thorough-bred horse, all faults, all vices, all diseases, are directly hereditary, as well as all virtues, all soundness, all good qualities, it is more necessary to look, in the blood-horse, to his antecedents, his history, his performances, and above all, to his shape, temper, soundness and constitution, than it is to any other of the horse family.

To breed from a small horse with the hope of getting a large colt; from a long backed, leggy horse, with the hope of getting a short, compact, powerful one; from a broken-winded or blind, or flat-footed, or spavined, or ring-boned, or navicular-joint-diseased horse, with the hope of getting a sound one; from a vicious horse, a cowardly horse—what is technically called a dunghill—with the hopes of getting a kind-tempered and brave one; all or any of these would be the height of folly. The blood sire (and the blood should always be on the sire's side) should be, for the farmer-breeder's purpose, of medium height, say fifteen and a half hands high, short-backed, well-ribbed up, short in the saddle-place, long below. He should have high withers, broad loins, broad chest, a straight rump—the converse of what is often seen in trotters, and known as the *goose rump;* a high and muscular, but not beefy crest; a clean, bony, well-set-on head; a clear, bright, smallish, well-placed eye; broad nostrils and small ears. His fore-legs should be as long and as muscular as possible above the knee, and his hind-legs above the hock, and as lean, short and bony as possible below these joints. The bones cannot by

any means be too flat, too clear of excressences or *too large.* The sinews should be clear, straight, firm and hard to the touch. From such a horse, where the breeder can find one, and from a well chosen mare, (she may be a little larger, more bony, more roomy, and in every way coarser than the horse, to the advantage of the stock,) sound, healthy and well-limbed, he may be certain, accidents and contingencies set aside, of raising an animal that will be creditable to him as a scientific stock-breeder, and profitable to him, in a pecuniary sense.

The great point, then, to be aimed at, is the combining in the same animal the maximum of speed, compatible with sufficient size, bone, strength, and solid power to carry heavy weights or draw large loads, and at the same time secure the stock from the probability, if not certainty, of inheriting structural deformity or constitutional disease from either of the parents. The first point is only to be attained, first by breeding as much as possible to pure blood of the right kind; and second, by breeding, what is technically called among sportsmen, *up*, not *down;* that is to say, by breeding the mare to superior (not inferior) blood to herself—except where it is desired to breed like to like, as Canadian to Canadian or Norman to Norman, for the purpose of perpetuating a pure strain of any particular variety, which may be useful for the production of blood mares.

By superior blood we mean that which approaches the nearest to thorough blood. Thus, a half-bred mare should never be put to a half-bred stallion, as in that case the produce will, in nine cases out of ten, degenerate below the dam; whereas, if she be bred to a thorough-bred, the produce will be superior, and will continually improve *ad infinitum*, by adhering to the same process of breeding up. In the second place, a reasonable probability of raising sound and healthy stock can only be attained by carefully selecting parents free from disease which is either hereditary or apt to become so.

It is idle for persons of this time of the world, to sneer at the idea of disease, or other qualities, being hereditary or transmissible in the blood: it is known both medically and physiologically that they are so. All diseases of the lungs and windpipe, known as the heaves, as broken wind, as roaring, whistling, thick wind, and the like, are incontestably transmissible. Blindness is, if possible, yet more so, and even when one eye is destroyed by accident, if the other eye, through a sympathetic affection, follow it, we should consider it by no means safe to breed from a horse so injured. Lameness arising from pure accident, is, of course, not transmissible; but where a race horse is broked down, as it is termed, in running—that is to say, where the sinews, or smaller metacarpal bones, commonly known as the splint bones, have given way, from want of strength sufficient to endure the strain laid upon them—it will be well to observe whether there be not some visible defect of the conformation of those parts, tending to undue weakness: such as disproportionate length of the lower or cannon bone of the foreleg, which can scarcely be too short; or the defect, which is generally called *tying in*, consisting of an impoper contraction of the volume of the leg, immediately below the fore-knee, and indicating an insufficiency of the splint bone. These malformations are distinctly hereditary. * * *

From the foregoing, then, may be deduced the following general rules:

1st. The more valuable horses are the most economical for all purposes.

2d. The more "blood," compatible with the size required, the better—the high-bred animal having greater *quickness, strength, bottom, health and vigor* of constitution, as well as courage and pluck.

3d. The "blood" should be on the side of the *sire;* that is, the stallion should be the thorough-bred, or at least, purer blood than the mare.

4th. Choose a stallion in every respect sound, short backed, well ribbed up, short in the saddle place and long below, with high withers, broad loins, broad chest, straight rump, a high and muscular but not beefy crest, a lean, bony, well-set-on head, a bright, clear, smallish, well-placed eye, broad nostrils and small ears. His fore-legs above the knee and the hind-legs above the hock, should be long and muscular, and below these joints short and bony. The bones of the legs should be large, flat and free from excrescences—the sinews clear, straight and hard to the touch.

DISINGENUOUSNESS.

In commenting on our remarks in reference to the agricultural experiments of Messrs. Stroman and Porcher with Rhodes' Superphosphate of Lime and other fertilizers, the Savannah *Express* says:

"We should not have noticed this matter, if we had not seen an article equally partial in a previous number of the *Field and Fireside*, wherein, after reading Prof. Shepard's and others analyses, and seeing that the amount of phosphoric acid was given at over 14, he asks the question of Prof. Shepard if he candidly believes that 11 per cent. of phosphoric acid is enough in such a costly fertilizer?

"This has a disingenuousness about it which is really unworthy the high character that the *Field and Fireside* has obtained, and which might do for any other subject than the one strictly scientific, and is not expected of one whose duty is thorough impartiality. We might remark upon the unnecessary fling in the '*so-called*' article, but hesitate, lest we may incur the suspicion of feeling the same interest in Rhodes' Superphosphate that some others do in particular fertilizers. We only call the attention of the Agricultural Editor to what must have been an oversight, and not an intentional act."

The *Express* confounds two very distinct things when it assumes that 14 per cent. of the superphosphate of lime, as found by Prof. Shepard in Rhodes' fertilizer, and 14 per cent. of phosphoric acid are the same thing. In estimating the value of the latter, the lime present in the salt must be deducted. By calling the acid 11. and the lime 3, to make the 14 per cent., we were intentionally *generous* toward this commercial manure, by somewhat overestimating the amount of valuable phosphoric acid, and underestimating the quantity of cheap lime present. At the same time, it appeared to be our duty to inform our brother farmers that a pure article of superphosphate of lime contains not only 11 per cent., *but seventy-one and a half per cent. of soluble phosphoric acid.*

The second analysis of Prof. S., as published in our last issue, increase the quantity of the superphosphate to fifteen and a half per cent., which will not raise the amount of soluble acid to twelve per cent. Does the *Express* insist that a commercial article, called a "Standard Superphosphate," really deserves its name, when its manufacturer proves beyond dispute that it has only fifteen and a half per cent. of the thing advertised, and eighty-four and a half per cent. of something else? Will the Editor accept ten pieces of coin nominally worth ten dollars each as gold eagles, in payment of a just debt of one hundred dollars, when he knows that they contain only fifteen and a half per cent. of the precious metal and eighty-four and a half per cent. of brass? Would it be "disingenuous" to characterize this *so-called* gold coin as a poor currency, and a worse "standard" of excellence?

The artificial manures manufactured in Great Britain have become so useful and reliable, so cheap and abundant, that the quantity of guano imported into the United Kingdom in 1859 was nearly three hundred thousand tons less than in the years previous. We have the official figures, and shall discuss the subject at length another time. Phosphoric acid in a more concentrated state by the ton than in Rhodes' Superphosphate can now be purchased in London, Liverpool and Bristol for about two cents and a half a pound. In Rhodes' "Mixture" only twenty-four lbs. of this acid exist in one hundred lbs., which is sold at $2.50.

At this price, according to Prof. Shepard's analysis, one hundred lbs. of phosphoric acid, (half soluble and half insoluble as it exists) will cost the consumer ten dollars, eighty-six cents and nine mills. Lawes' mineral superphosphate costs less than a cent and a quarter a pound in London; and it can be delivered in Augusta so that the phosphoric acid which it contains will not cost, by the cargo, over three cents and a half a pound. We happen to know that some of the most enterprising and trustworthy business men of Augusta are more or less interested in selling commercial fertilizers on commission; and we want them to understand, 1st, that phosphoric acid forms nearly one-half of the ash or earthy part of every seed of cotton, corn and wheat grown in the South; and 2d, that they can add one hundred per. cent. profit to the cost of this substance, as prepared for crops in England, after it is laid down in Augusta, and then sell it at seven dollars per one hundred pounds, and *thirty* per cent. less than the market price of Rhodes' Superphosphate, or any other, the analysis of which is reliable, so far as we have been able to learn. Having said thus much in favor of importing assimilable phosphoric acid from England, it is proper to add that it can be prepared in Augusta cheaper than it can be imported.

Georgia abounds in iron pyrites, or the sulphuret of iron—a mineral from which sulphuric acid is largely manufactured in England; and we hope to see Major Cooper and others increase the obligation of the State to their sagacity and energy by still further developing its mineral treasures. There are only sixteen parts of sulphur in forty of the best oil of vitriol; the other twenty-four being vital air, or such as we breathe. The bases of all wealth come out of the earth, and we need not fear to look into it to find both sulphur and phosphorus, and their valuable compounds, at home. England has already diminished her annual consumption of guano about three-fourths, because Agricultural Chemistry has taught her business men how to find the food of plants in the minerals and soils of the Island, and how to prepare this plant-food for general consumption, cheaper than it can be brought from South America. We do not treat such patriots as Messrs. Mapes and Rhodes with "disingenuousness," when we ask them to try, in future, to furnish an important element of fertility at less than ten dollars per one hundred pounds, which is sold in England at one fourth the money. Our *Southern Field* rejoices in the sunshine of progress, of truth, and of science. Its light cannot be obscured for one moment, to conceal from public view facts and things which should be known of all men. It shall be our care that no injustice is done to speculators of whatever kind; and we invite free discussion on all rural topics, for the sole purpose of eliciting the truth, the whole truth, and nothing but the truth.

STOCK-GROWING AT THE SOUTH.

The importance of devoting more attention than has hitherto been given to this branch of husbandry in all the cotton-growing region, is daily becoming more and more apparent. Intelligent agriculturists at the South are fully alive to the imperative necessity of providing in some way for the renovation of soils naturally fertile, but exhausted by long-continued cropping with cotton. The culture of grasses and the raising of stock is nature's method of renovating the fields impoverished by long tillage, and this mode of treatment will be found for the most part efficient and economical. True, guano and artificial fertilizers may be resorted to, but will they thoroughly renovate the soil? We think it will hardly be claimed that more can be done with the aid of these fertilizers than to maintain a fruitful soil in its present condition. Other means must be resorted to, in order to restore to worn-out lands their lost fertility.

The improvement of these by growing stock upon them, instead of being an item of expense, might, in most cases, with proper management, be made a source of profit. It is quite a common mistake to suppose that grasses will not flourish upon good cotton land. True, the clover and herd-grass of the northern and middle states will not flourish in a climate suited to the growth of cotton; but there are other grasses, such as the Kentucky blue grass, will grow on any good soil, and will flourish on such as are rich in lime; Col. Stanford's wild oat grass, orchard grass, etc., which will furnish excellent and abundant pasturage upon a great proportion of the exhausted cotton lands. That sheep, cattle, horses and mules, can be profitably raised at the south, has been abundantly shown by a vast number of successful experiments, and it is by many claimed that wool can be grown more profitably here than in any other section of the country. But we hear it said, "The cotton-planter's business is to kill grass, instead of raising it; that cotton and stock cannot be profitably produced upon the same plan-

tation at the same time; that it is more profitable to wear out the land and go in search of virgin soil." May not the correctness of these sayings well be questioned? The growers of tobacco and hemp have found it profitable to connect stock-raising with the production of these staples; and we are confident the opinion is gaining ground among the intelligent cotton-planters, that it would be to their advantage to pay more attention to the improvement of the soil by stock-growing, thus increasing the amount of cotton grown per acre, and lessening the cost per pound of producing it.

Most kinds of stock could be grown at a very cheap rate upon a great proportion of the rolling cotton lands which have become exhausted, and are now of little value. The large sums now paid by the planter to other states for mules to work his crop, and bacon to feed his hands, would be saved; and while getting these at a cheaper rate, he will be reaping from such a course a still greater advantage in the greatly increased value of his lands.—We do not for a moment suppose that a single acre of rich cotton-fields, such as lie along the valley of the Alabama River, are to be devoted to stock-growing so long as their fertility remains; nor do we wish to see the aggregate amount of her cotton crop diminish. On the contrary, we should prefer to see it increase—and this, we believe, would be the sure result of judicious stock-growing upon the worn-out soils.

Is not this a subject of great importance, and worthy the careful consideration of every agriculturist at the South?

SOIL ANALYSIS.

Prof. Johnson has set himself in array against a new theory of Liebig's, for one thing, and scouts the utility of soil analysis, for another. Those who have read Liebig's recent pamphlet on "Modern Agriculture," will remember his doctrine, that mineral matters are not in a soluble state in the soil, in support of which he quotes the experiment of passing through a sample of fertile soil, water holding in solution phosphoric acid and other plant foods, and thereby removing the salts entirely.—The formerly soluble mineral matters he supposes to have been made insoluble in the passage through, and putting this and that together, he says that if this be the case, why then plants must actually have the power of taking in the insoluble material which they need for their growth, and making it soluble after it gets within their spongioles. Johnson thinks Liebig's theory would be very pretty if the little *if* were removed. In other words he says that Liebig's experiment was rudely performed, and that the mineral matter was not and never can be entirely removed from the water, and hence Liebig's superstructural argument falls, like the Pemberton mills, for want of a sound basis. He says he knows of beans and other plants having been grown and ripened in naught but a watery solution of mineral and organic food—a fact which goes far toward proving that soluble matter is used to full advantage by plants, when they can get it. Although I do obeisance to Liebig, I think Johnson is right in this instance, and so I think do many others. As to soil analysis, Johnson reasons thus:—One foot deep of the soil in an acre weighs 2,0000 000 pounds; a crop of wheat will remove say 20,-pounds; if that 200 pounds be not in an available state, no crop will grow. To know if there be enough for the crop, you take a little sample, say 100 or 1000 grains, and analyze it; now, does any man living expect the chemist to tell, by even the most miraculously sensitive balances or tests of the infinitesmal sample, whether the 2,000,000 pounds contain enough phosphoric acid or ammonia, or other ingredients, to raise a crop? Take a barren soil, for instance, or one called so, on which the application of 400 pounds of guano will make all the difference of sterility or a crop; now, can a chemist tell in his laboratory, by testing 100 grains of that soil, taken promiscuously from all parts of the field, whether the guano had or had not been added? Verily not, says Prof. Johnson. And so our young agricultural chemist takes issue on the question, and is prepared to do battle with our beautiful pet theory *a l'outrance*.* He thinks that if one would take 50 pounds of soil, and wash it with an enormous quantity of water to dissolve out the soluble salts—a little job which would take at least a fortnight, and might a month—he might, by analysis, find whether there was a great excess or deficiency of plant food in the field from which the sample came. But the cost and trouble of the experiment are serious objections to putting the scheme into practice.

The most fertile soils contain the finest particles, or, in other words, soils are like linen, the better for having fine texture. Most soils are deficient mechanically rather than chemically. There is great store of plant food, but not finely enough divided. A field therefore, which, in a certain state of pulverization, will produce 15 bushels of wheat, would or should yield 30, if worked up twice as fine.—Why? Because there is twice the amount of surface of particles exposed to the action of heat and rain, and therefore twice as much plant food set free. Take your multiplication table and figure up this idea as far as you like, and then you will see the use of subsoil plows, and clod-crushers, and good harrows, and deep plowing, and all these modern contrivances for breaking up our fields into a good seed-bed. —*N. Y. Tribune.*

* The writer for the *Tribune* should know that this "pet theory" was exploded as long ago as 1853, by Maj. J. F. Lee, of Washington, and Prof. Booth, of Philadelphia, who made the same argument against it that Prof. Johnson now uses, and that Prof. Johnson himself published the same opinion five years ago.—*Ed. American Farmer.*

☞ The style of orchards they have in Portland, Oregon, may be inferred from the description of one, which yielded one season $30,000 worth of cherries, pears and plums, and required 40,000 feet of lumber for fruit boxes.

Cuts and Wounds in Cattle, etc.—Mix the yolks of six eggs in half a pint of turpentine; bathe the part several times a day. The cure will be rapid.

CHINCH-BUGS IN CORN AND WHEAT.

An Illinois corespondent of the *Prairie Farmer* writes as follows:

These little pests almost destroyed the entire crop in this locality last season. I noticed that when a stalk of corn came up among the grain—and this is often the case when sown on corn land—immediately about the stalk the grain matured perfectly—was not injured by the bugs.

My theory is this: When grain commences to ripen, the sap leaves the bottom of the stem first and ascends. The bugs do not like to follow it, for when they get up too high on the stem, it becomes too hot for them. They, therefore, leave the wheat and attack the corn, leaving a sufficient supply of sap in the wheat stalk to mature the grain perfectly. I have also noticed that when wheat was sown along side of a field of corn, there was a strip not injured in the least.

Now for a remedy for the chinch-bug in wheat: Prepare the ground in the fall, and sow in the spring as soon as the ground will permit. About the first of June, take a small bull-tongue plow and run furrows through the wheat ten or fifteen feet apart. Drill in corn. When the wheat begins to ripen, the bugs will leave it and go on the young corn, where they can get a better supply of food.

To keep them from corn, when planted along side of wheat, prepare and sow thick with corn a small peice of land between the wheat and the planted corn, of sufficient sise, that it will supply the whole army with a comfortable living, after they leave the ripening wheat, which they will do, if there is corn for them to feed upon.

Then kill them. They will all gather on this strip of corn. Haul straw—dry straw—throw it among the corn and fire it. They can all be destroyed in this manner.

The Cost of Negligence.—I am fully persuaded that farmers lose more annually by negligence or procrastination, than would pay the entire taxes of the State. How many farmers neglect to keep their farms clear of burrs, or turn their sheep in a stalk-field or to the woods, and let them become covered with burrs, and sell the wool from five to ten cents a pound less on that account. As a wool-buyer, I know the number to be quite large. Again, by neglecting to separate their sheep, thousands of lambs die annually by coming in mid-winter, yet by very little attention this all could be remedied.

Another fault is, by neglecting to trim their stock; by neglecting to alter a calf till it is two or three months old, the loss is about three dollars a head. I know, as a stock-dealer, that thousands of dollars are lost annually by such negligence. They also lose by not trimming their hogs and sheep in due time. I go to A., and his two-year-old steers are worth but ten or twelve dollars, while the same year his neighbor B's are worth from twenty to twenty-five dollars. Why is it? A. keeps common stock, and he takes no care of it; in winter, he piles up straw out of doors, and lets the cattle run to it. In the summer, perhaps, he salts them once a month, if at all, while B. keeps improved stock; if not, he pays his neighbor C. fifty cents or one dollar for each calf, trims them in time, they have nice horns, then he saves hay, fodder, &c., to feed them in winter, or feeds the straw, if scarce of feed, as he should do, by hauling it out to them fresh every day, then gives a little corn or hay, or meal, in the spring, when the grass first comes, and his cattle get a good start, and he is careful to see that they have salt two or three times each week, and all the water they need. I can tell cattle that are salted, by looking at them, from those that are not.—*Ohio Cultivator.*

ADVANTAGES OF A HEAVY SOIL.

A clay soil, well under-drained, is undoubtedly the most perfect soil in existence. I have heard cultivators say they did not want a soil that needed any artificial drainage; in other words, they desired one so light and porous that water could not be long retained by it. Long experience has led me to a very different conclusion. A porous soil will not retain manure long enough to become as fertile as I wish, and the cost of frequent manurings which it must receive, if I get large crops, is not a small item.

On the other hand, a heavy or strong loam will hold for a long time all it gets. But unless a heavy soil has a porous subsoil, which is very rare, it will not allow the water to drain off so readily as good farming requires—passing, as it must, during this drainage, across the whole breadth of a large sloping field. But every disadvantage is removed if we tile-drain it, the manure is retained, and the water flows quickly off.

We must not expect to find a perfect soil to order. I once asked one of the most skillful and eminent cultivators in this country, what was the relative value of a decidedly sandy soil, and a strong or clayey loam. His answer was, "If you give a hundred dollars an acre for the sandy, you can afford to give two hundred dollars for the strong loam, for you can do whatever you like with it. Manure will enrich it to any extent you wish; and by complete tile-drainage you can render it fit for any use. —*Cor. Country Gentleman.*

To Make Old Silk Look as Well as New.—Unpick the dress, put it into a tub, and cover it with cold water, in which is placed a tablespoonful of gall; let it remain an hour; dip it up and down, but do not ring it; hang it up to drain. Iron it very damp on the wrong side, and it will look beautifully.

Such is the alarm felt by the people of Massachusetts, in regard to the spreading cattle disease in that State, that Gov. Banks has been induced to to call an extra session of the Legislature, to take the matter into consideration.

Tobacco water, poured boiling hot on seed corn, is said to be a preventive of the cut worm. An old tobacco-chewer spitting in every hill, produces the same effect.

☞ The earth is a tender and kind mother to the husbandman, and yet one season he always harrows her bosom, and at another he pulls her ears.

The Farmer and Planter.

COLUMBIA, S. C., JULY, 1860.

HINTS FOR THE MONTH.

The botheration of harvest generally crowds a good deal of the June work upon July. The small grain must be cut and hauled in, as it is good policy to do both when the proper time comes. It is miserable economy to run any risk of losing a crop already made. There is grass in the corn, in the cotton—everywhere there is grass, and we are needed everywhere at once. But take it steadily, and do your work well, and you will get through none the less rapidly. Your corn is just "laid by," or being done. This is one of the most critical operations of the farm, and we think that the grass must be killed, but if you can do it by superficial plowing the better. The corn certainly needs all the roots it has now to enable it to make an ear.

Sow *Peas* among your corn—they will probably not make peas, but they will shade the ground, and afford vegetable matter very good for wheat. The flatter corn ground is left the less it will wash; the corn roots will spread out more extensively, and the the ground will be in better condition for sowing wheat. Run over your corn with the hoes after plowing, and chop out weeds, bunches of grass, &c. —it is an operation that generally pays well.

Cotton.—The cotton crop has, we take it, been troubled a good deal with grass. The rains during the month of June and the harvest have been favorable to his verdant master. But the grass must be killed, let what may come, and this operation very often ruins the prospect of a good yield. The roots of the cotton plant are now beginning to fill the bed —keep the plow away from them as much as possible—throw the earth towards the plant and *thin* down, according to the soil, as quickly as possible. The superficial culture of cotton is so generally admitted and practiced by all who are not always "in the grass," that it is hardly necessary to refer to it. A good stand is indispensable to a good crop, but if the stalks are left too crowded they run up spindling without the branches. The sooner you get your cotton to branching the better, and the more lower branches the greater the chances of a good crop.

Potatoes.—Hoe out and plow—plant all the slips and vines the season will allow. Few things better to have a surplus of than potatoes.

Sorghum.—You may still plant sorghum, and make good food for horses, mules and hogs.

Turnips.—Ruta-bagas should be planted this month, and if seasonable, any other varieties. Make your ground rich, prepare it well, and put down plenty of seed. We prefer always to drill turnips.

Hogs—Are in the harvest field and doing well enough, but it is well to keep an eye on all stock. Salt and sulphur should be used occasionally, and will prove serviceable.

Last, but not least, see to your fences, water-gaps, gates, and have all secure.

THE SUPER-PHOSPHATES AGAIN.

We cheerfully comply with the request of Mr. RHETT, to publish the analysis of Rhodes' Superphosphate, by Mr. LIEBIG, of Baltimore.

We have no wish to excite prejudice against any commercial fertilizer, but we have a higher duty to perform—one above all personal considerations—to protect the agriculturist against imposition. Chemists must settle their own discrepancies amongst themselves (we wish them a good time of it)—we have only to deal with the facts in the field, which will be found oftener worth more than chemical analyses.

Now here is a fact worth noting: If a good superphosphate "draws with avidity moisture from the air," and is readily dissolved by rain and dew, how does it happen that super-phosphate applied last spring (1859) to potatoes, to corn in autumn, to wheat in November, is still found in the soil turned up by the plow, and without any apparent benefit to the crop? Is it because it is standard?

OUR OFFENCES AND DEFENCES.

Our cousins over the river are getting very restive under our questions about "Hancock farming."—We beg them to keep their temper—we are not "*invidious*"—only very inquisitive.

We have an old neighbor, who invariably hails everybody he sees passing, and puts questions by the dozen to them. One day John N—— was passing, in no very good humor, and in a hurry, when the old fellow hailed him. John made a pretty rough reply, when the old man exclaimed, "d——n it, you needn't get into such a passion—I don't live on the big road, or take the papers, and how in the devil am I to get the news if I don't ax questions."

We live a good ways from Hancock, and we beg to be indulged, at least as long as their neighbors evince a want of faith in their infallibility. That Oglethorpe man has struck much harder blows than ours, and when "P" clears him up, may be we will visit Hancock, and see for ourselves, for it seems that is the only way of learning the mysteries of "Hancock farming." "P." seems to think he has demonstrated the fact, however, by proving that two or three gentlemen have made two hundred per cent.

increase, by the use of guano on cotton. We can get a hat full of certificates from gentlemen who will declare that they have never been able to see any benefit from the use of guano on their corn, cotton or wheat, while we know others whose experience has been quite the reverse. What does this prove? either that there must be some peculiarity in the soil or seasons, which increases the fertilizing effects of guano. We can hardly believe that all the virtue lies in the Hancock implements.

We have carefully read everything connected with the "Hancock farming," which has fallen in our way, and have only been able to find out that the very successful Hancock farmers have large tracts of land, which cost them originally very little money; they can keep a large stock of cattle economically, and make a great deal of manure; they use guano very liberally, and such agricultural implements as will enable them to cultivate a very large area to the hand on their peculiar soil. They are blessed in the possession of a soil in which one mule can draw a plow seven inches deep, and in the enjoyment of a nerve to try experiments, a liberality to invest money in them, and an intelligence to conduct them properly. But gentlemen should not get out of temper because other people less fortunate are not able to declare like results.

Is there a farmer in Hancock who can make a better exhibit than Dr. Ray did, of the whole product of his plantation, at our last Fair? If there be we would be very happy to make a record of it in our columns.

STOCK-GROWING AT THE SOUTH.

Our readers will find a suggestive article in our present issue, upon the above interesting subject, clipped from the *Cincinnatus*—a journal to which we are often indebted for valuable information.

We are not prepared to subscribe to the opinion so often expressed by agricultural reformers—that our exhausted soils can be re-claimed by growing animals, grains or grasses. They are all exhausters, more or less, but it is as plain as the nose on a man's face, that we devote too exclusively all our energies to the production of Cotton. Everything yields to the grand monarch. We doubtless ought to diversify our industrial pursuits and strengthen our independence. Can it be done? That is the question. Is there a single reader of our paper who does not know some planter who manages to make fair crops, keeps good mules, raises every year a few colts, raises most if not all of his hogs, grows his own wool, and manufactures his own negro clothing, and seems to prosper? If one man can do it two can; if two can do it five can: and so can a whole neighborhood, or a State, upon the same principle. However, it may have been good policy once to do otherwise—it is certainly not so now. We don't want a pound less of cotton grown, but we want to enjoy the "glorious privilege of being independent."

"HOBBY HORSES."

It is proverbial that the members of the agricultural profession have a fancy for riding hobbies.

You may exhaust all your logic in vain efforts to prove that by rest, judicious rotation, and careful husbanding of manures, a man may reclaim a worn-out field, or keep one in good heart; but if you will come out with a "spread eagle" advertisement, of a seed which will yield ten-fold more than any other variety, or a manure that will increase your crops by geometrical progression, you will find hundreds of the staunchest, most sober-sided and practical men of the country clutching at it with all the eagerness of a miner who has just found a "pocket" in his "diggings." What is the reason? Is it attributable to our ignorance or our innocence in believing "everything is gold that glitters," or is it to both?

It is a matter well worth our consideration. We have had repeated warnings, by the numerous impositions recently practiced upon us, that we must take care of our own interests. The press can no longer be relied on as our protector. The modern practice of allowing advertisements to come under the editorial head is rapidly undermining the respectability and the usefulness of the great institution. Opinion is in the market—its price is written upon it.

In nothing has hobby riding been carried on more extensively than agricultural chemistry. The publication of Liebig's remarkable discoveries, some years ago, was like the fabled sowing of Dragon's teeth—there sprang up immediately a host of teachers, who have given birth to all manner of opinions. The simple minded man, who is inclined to believe everything because "it is in a book," finds himself continually led astray; the more ardent seeker after truth, finds himself often doomed to disappointment at the moment he feels like crying out "*eureka!*" and the practical common sense man is driven off the field because he is promised too much, altogether too much.

It is not a little remarkable how pertinaceously these agricultural chemists hold on to their opinions, often when in diametrical opposition to each other. The other day we met with the following extract in a letter from a Prof. Baer, of Baltimore, and as it was written in reply to a charge of having expressed opinions "crude and unreliable," it may be put down as an opinion not hastily expressed:

"I stated that *smut* and *rust* were the result of different causes, and in addition to explaining the causes of the two, denied emphatically that either of

them were [was] caused by, or belonged to, any of the *Fungi* family, and were not natural diseases; and that sulphate of copper (bluestone) was not an antidote; and now repeat, that it is no more a preventive than soaking the grain in cold water."

Now, is it to be wondered at if any practical farmer, after reading the above, should cry out that Prof. BAER is a book farmer or a "scientific humbug?" Prof. BAER may be as firmly convinced as he pleases, he will find very few believers among the most experienced farmers, and the expression of such opinions is just heaping up new obstacles in the paths of "scientific agriculture." Facts are stubborn things, but very useful ones, and although they may run counter to scientific hobbies, they will not easily be set aside.

We have been sowing wheat for twenty years; have soaked in blue-stone solution, copperas and brine, and have never found smut after blue-stone, when properly soaked. We have found it after brine or copperas, a little of it, and abandoned that steep on account of it. We have sold wheat to neighbors who "didn't believe in soaking," and bought ours because "it was not smut wheat"—nevertheless they had smut. We have known failures where the blue-stone was not *dissolved*, and we have known failures where the wheat was thoroughly soaked in hot water, but we have never known a failure where the wheat was well soaked in a blue-stone solution.

As to the "*Fungi*" theory, we can say nothing.—We know the fact that there is a preventive, and leave the theory of "*Fungi*" to scientific gentlemen, who have more leisure and taste for such investigations.

For the Farmer and Planter.

A CORRECTION, &C.

UNIVERSITY OF GEORGIA,
Athens, May 11th, 1860.

MR. EDITOR:—Will you permit me to correct an error of the press, in the article you copied from the *Field and Fireside*, on the subject of Rhodes' Superphosphate, which ought to have been corrected before? The sentence now reads as follows:

"*Burning* a true bi-phosphate, and the natural bone-earth in phosphatic guanos, the farmer can mix them quite as well as any trader, or manipulator of commercial manures." For "burning" read "*buying* a true bi-phosphate, &c., and the idea will be plain as it was written.

I fully agree with you that commercial manures ought to be studied with great care; not only to escape paying rather dear for one's whistle, but as shedding much light on the art of producing highly concentrated fertilizers on every farm. Diluted sulphuric acid poured on a rich phosphatic guano, free from organic acids and the carbonate of lime, sets free its equivalent in phosphoric acid. In case the quantity of sulphuric acid is sufficient to take to itself all the lime in the guano, no bi-phosphate will be formed. The phosphoric acid will be in the water, and the lime and oil of vitriol, as gypsum, will mostly remain undissolved. Let us suppose that two-thirds of the phosphoric acid liberated by the oil of vitriol, properly diluted, is in a state of bi-phosphate of lime, and one-third is free. This latter ought to be neutralized by the use of potash—either in good wood-ashes, in pearl ash, or commercial potash. Ash obtained from the combustion of cotton seed gave Prof. Sheppard about 32 per cent. of the phosphate of potassa, and over 80 per cent. of the ash of wheat, and about the same of the ash of corn, consist of the same alkali and acid. The fact should also be remembered that the phosphate of potash, or of potassa, as chemists prefer to call this important alkali, is a soluble salt, and, therefore, more likely to be washed out of tilled earth than the comparatively insoluble phosphate of lime. It is quite as easy to make a bi-phosphate of potash, of soda, and of magnesia, as it is one of lime. As these fertilizers, as well as ammonia, sulphuric and nitric acids, are very expensive when reasonably pure, I am devoting a good deal of attention to their extraction from the deep subsoil and atmosphere. I find lucerne, or the French clover, one of the best plants for this purpose. It is only sixty-one days since the plant enclosed in this letter had its germ moistened in the earth; and now its tap-root is a foot in length as it is, and I probably broke off six inches of the lower part of it in pulling it up out of a hard subsoil. The ground was only plowed once with a one-horse plow in an old broomsedge field, where it grew. The seed was sown broadcast, and bushed in.

I have lucerne roots from two to three feet in length, that grew from seed scattered on Bermuda grass, without plowing or hoeing, which bear seed every year. This growth is on poor red clay land. I have some acres in red and white clover, and quite a number in other grasses; but no forage plant is likely to do better, if as well, as lucerne, to draw fertilizers from the deep earth and from the air.—Every farmer should raise his grass seed as soon as practicable. This will give him good seed at all times, and he can sow when grass grows best in his corn and cotton fields.

I look to rich winter pastures, excellent meadows, and fine stock, as likely to do far more for the South than any commercial manures. How to make such pastures and meadows will be fully and thoroughly discussed in the coming volume of the *Southern Field and Fireside*.

Very respectfully,

DANIEL LEE.

[Dr. Lee will be more fortunate than we have been if he can succeed in growing lucerne to any extent, without a great deal of time and labor. The weeds and grasses, "to the manor born," rarely fail to root out all foreigners in a few years. The main difficulty, however, in the introduction of the clovers, on a large scale, will always be, that they will not flourish on poor soils, and planters never will give up the rich ones—while cotton is worth 10 cts per lb. We will keep our readers posted up on any new lights on the subject.]

For the Farmer and Planter.

OBSTRUCTIONS.

Mr. Editor:—There are few things which give rise to more annoyance, more neighborhood disturbances, more destruction of valuable property, more sickness, and more unnecessary taxation upon our time and pockets, than the custom of felling trees into our water courses. It is an abominable relic of "frontier life." We have no longer the timber to waste; nor have we any right—as we now have neighbors—to do that which will make another a sufferer.

A may be fortunate in the possession of a tract of swamp land, containing a vast amount of fine timber, for which he has no immediate use. It may save time (for him) to fell it into the stream and trust to the first rise, to float it out of his way; but if it form a raft in a bend of the stream, on B.'s plantation, and overflow or destroy B.'s corn or cotton, A. should be made answerable for the damage—so equity, so common sense, would say. B.'s corn has not only been injured, but a raft has been formed which will cause deposits of mud and ponds of water, and, as a necessary consequence, sickness.

But, like all rafts, the evil does not stop here; it continues to accumulate, to gather force, and inflict damage upon others. In its course down stream it is piled up against mill-dams, and sweeps them off, to the serious inconvenience of neighborhoods. It collects against bridges and sweeps them off, making it necessary for that notable Board, the "Commissioners of Roads," to meet and assess a tax to repair the damage done by a careless manager.

The road tax in many of the upper Districts is very heavy, and much of it is chargeable to the felling of timber in streams.

Is there no remedy for such a grievance? It is one which bears upon all classess; for if it does not affect everybody's interest in one way, it does in another. Could not the Legislature devise some measure by which the nuisance could be abated? Good land is by far too much in demand to be wasted, and the health of society too precious to be trifled with.

VOX.

For the Farmer and Planter.

A COMPLIMENT---GUANO---DOURRA CORN---MILLET---BEES.

Mr. Editor:—I have been long intending to drop you a few lines for your journal, and feeling somewhat in the humor just now, proceed to discharge a part of the debt due you for the zeal and enterprise you show in publishing the *Farmer and Planter*.—And first, allow me to congratulate you upon the great improvement visible in its late numbers. The number for June is hard to beat by any journal in the country, North or South.

In order to save myself the trouble of any regular communication, I will make this merely a kind of running commentary upon some matters and things; and first,

Guano.—I frequently see complaints about crops being "burnt up," "fired," &c., by it, while, though I have been using it for years past, I have never yet seen any injury whatever of the above kind from it, but on the contrary, always decided benefit, even in these respects. I have come to the conclusion that the fault does not lie in the guano, but in the manner in which it is applied. With one single exception (and that was because I could not get it early) I have always applied it below my seeds deep and early. For corn I always plow out the old alley (where the new bed is to be made) with two furrows as deeply as I can, with a plow drawn by 2 mules, and in the winter. When ready to plant corn or anything else, the guano is spread, one bag per acre, in the bottom of this trench or furrow, and the same plow and team follow immediately, and cover it up with two furrows, in which the corn is planted as soon after as practicable. Applied in this way I have never seen any injury whatever from guano, but always a most decided benefit, both in the appearance and the yield of the crop. I have used guano on different soils, but the largest and most frequent applications have been made on the plantation where I reside during the winter, where the soil rather superabounds in red and blue clay, generally very little below the surface, but sometimes cropping out, and is so hard that during dry weather it is plowed only with great difficulty, when it can be plowed at all. After trying the different methods of applying our different manures, I have found that applied in this way they all pay best, besides being done at the most convenient time and with the least labor. I have never applied guano to Long Cotton with satisfactory results, and therefore now never do it, but find that it pays best probably on field or cow peas and next on corn. The best manure that I have ever applied to Long Cotton has been Kettlewell's Renovator, which I would be very glad to see tried on the St. Julien plantation, where the owner is a much better

experimenter as to facts and figures than your correspondent. I have found it good upon root potatoes also, when applied along with plantation compost, at the rate of one barrel (300lbs) per acre—the most profitable quantity, according to my experience.

Dourra Corn.—Talking, or rather writing, about corn causes me to remember having found from experience that where stands of corn are broken it does not pay either to supply breaks with seed or to transplant. I have, for years past, done neither, but always plant Dourra Corn or Sugar Millet in all missing hills in my corn fields, and I have found it to do and pay well. When planted early, the Dourra Corn will make 2 or 3 heads to the stalk, and the first head will shell as much as our ordinary ear of flint corn; and when planted late, say in April or May corn, it will still make as much as the corn, and it answers as an excellent substitute for corn to feed to poultry, besides making very good bread when ground. Of the uses of the Sugar Millet I suppose that I need not say anything at this day.

Bees.—I am quite astonished to see how few planters pay any attention whatever to this really valuable and most interesting insect, and how profound is the ignorance of its proper management. For $1 25 may be purchased, postage paid, of Messrs. Saxton, Barker, & Co., of New York, "Langstroth on the Hive and Honey Bee," where not only all that is known may be learned of their natural history and habits, but how they may be managed with both pleasure and profit, and with little or no danger from their stings—so terrible, in idea, to most persons who know nothing about them. With this system of management, failure is hardly possible, where ordinary intelligence and care are bestowed, while a rich, sweet and abundant harvest rewards intelligence and zeal. With "Quinby's Mysteries of Bee-keeping Explained," costing only $1, from the same publishers, added, any tyro may have a complete library of all that is known of the natural history, instincts and successful management of this insect; and I take the liberty of calling the attention of planters, their wives, and their larger children, to this most delightful occupation, persuaded that every one that may be induced to make a single trial will go on and heartily thank me for the recommendation.

The oat crop is by no means a failure hereabouts. The few crops that I know of are uncommonly fine. I have two up to this, almost no rust, but May birds were very destructive—small crop of barley was eaten up by them before discovered—had neither wheat nor rye sown—and potatoes good stands and looking well.

Yours, respectfully,

C.

For the Farmer and Planter.

CURE FOR LAMENESS IN HORSES.

Editor Farmer and Planter:—In March last, one of my mules became suddenly and severely lame in one fore-foot, exhibiting, in a highly aggravated form, pretty much the same symptoms as those manifested by Mr. Osborn Floyd's horse, as described in his communication in the June number of the *Farmer and Planter*. I applied the Mustang Liniment freely, twice a day, for six days, without any apparent benefit; in fact, the lameness seemed to increase—the mule standing upon three legs, only allowing the point of the hoof of the lame foot to touch the ground; refusing to move except when strongly urged, and suffering, to all appearance, much pain. The Liniment failing to produce the desired effect, I prepared a strong decoction of Red-oak bark, adding about 1 pint of salt to a gallon of the liquid—with which the foot and leg were well bathed, morning and evening, and a poultice of Poke-root—renewed every morning—bound about the foot as high as the fetlock, or pastern-joint. This treatment was continued a week, when every symptom of lameness and disease disappeared, and the mule again at work. No return of lameness since.

As additional proof of the efficacy of this treatment, I will state that about four weeks since, another mule became as severely lame as the first, when I immediately resorted to the Red-oak bath and the Poke-root poultice—using no other means—and at the expiration of four days, this mule was entirely relieved, and performing its full share of work in the plough.

It may not be amiss to add, that the bath should be cold when applied. A sufficient quantity may be prepared at one boiling to serve for several days.—The poultice is prepared by simply pounding the Poke-root in a common mortar—the juice of the root rendering the poultice sufficiently moist without adding any water.

While the mules were lame and under treatment, they were stabled and fed as usual, at night, and turned on a grass pasture during the day.

Williamsburg, June, 1860. A. W. D.

[We thank our esteemed friend, A. W. D., for his prompt and intelligent response to the call made in our last issue. It is a practical illustration of the great amount of valuable knowledge that might be obtained through the columns of our journal, if all who wish information on particular subjects would make the *Farmer and Planter* the medium of asking for it, and if those who possess such information would enlighten them through the same medium.—Practical enquiries and answers between the Agri-

culturists of our State, through our columns, would soon drive out the existing prejudice against "book farming," and cause our subscription list to so greatly increase as to enable us to make the *Farmer and Planter* a reliable reference for every Agriculturist.]

For the Farmer and Planter.

COTTON SEED FOR PIGS.

EDITORS FARMER AND PLANTER:—Your most valable journal for June came to hand in due time; yet I was anxiously awaiting its arrival, for it is always received with pleasure and read with interest. I appreciate each number as equal to the subscription price for the year; and I really wonder that all in South Carolina, who till the soil, do not subscribe for it, if they would invest *one dollar* so as to realize the largest profit.

They would also have their consciences relieved, knowing that they were helping to sustain a Southern enterprise, and the only Agricultural journal in their State.

In reading a piece in your journal, on the subject of "cotton-seed oil," my mind recurred to an experiment I made last fall, on feeding cotton seed to pigs:

I was induced, by some reports which I had read in one of the Alabama papers, to try them; consequently I selected some half dozen of my best shoats, and put them up in a close pen, well sheltered and littered They were kept up some two months, and fed all the time, three times a day, with the same food, only in different proportions.

I commenced on one third corn and increased it, and reduced the proportion of seed, as the pigs seemed to be doing badly.

The food was all well cooked, salted, and, occasionally lime thrown in; but still the pigs got poorer, and eventually they were turned out on to my pea fields, to save their lives, but it was too late. for one died—in a few days another, and another.

Now, Mr. Editor, I do not say that it was the cotton seed that killed them, but I believe it was, and I am so thoroughly convinced of the fact, that I will not try them again.

The old cry, "Cheering prospects for crops," is again greeting us on the arrival of almost every journal. Yes, sir, by the time corn and cotton get out of the ground, you hear it.

Some may chance to have a good rise, and away it flies on the wings of the wind, and is soon telegraphed to the nations of the earth, while, probably, the majority of our farmers have *bad* prospects; yet that is not generally known.

If any good ever results to the planter from those untimely puffs, I, for one, have yet to be made acquainted with the fact; but, on the contrary, it is the farmers and planters of our cotton growing region who have to pay the "piper," to the tune of millions of dollars.

I think I may safely say that the prospects for a good crop of cotton, in this vicinity, are decidedly unfavorable, from unusually heavy rains and winds, and continued for so long a time, as to give Crabgrass the advantage of us. We, also, have had the weather too cool, and some hail.

I am very much pleased at the course you are pursuing with regard to Fertilizers, and hope you will continue in the even tenor of your way, defending your constituents, exposing the humbugs and running them out of our markets, then the worthy will be well remunerated for their honesty.

Our neighborhood have a "Farmer's Club," and many experiments are to be reported at our annual meeting. I am ever experimenting on Fertilizers, Sub-soiling, &c., and should my hurried effort be worthy your attention, I am ready to communicate.

With my best wishes for your success,

I am, most respectfully,

Leavenworth, S. C., June, 1860. B. W. C.

For the Farmer and Planter.

EXPERIMENTS

MR. EDITOR:—I heartily respond to your call upon the planters and farmers of the country to give in their experiments with the various commercial manures, now so much "puffed" in the papers. We *must* protect ourselves—there is no use looking to any other quarter for protection.

Human ingenuity has been almost exhausted, in divising plans by which "puffs" can be got out in the most attractive and plausible manner. The new trick of getting an advertisement slipped in as an *editorial*, you have referred to as a great imposition; and it really is. The readers of a paper, (not into the secret,) readily take everything under the editorial head as either *editorial*, or *endorsed* by the editor.

There is another trick I have noticed: These commercial Fertilizer gentlemen get a Committee at an Agricultural Fair to examine their manure. It is the duty of the Committee to exammine everything on exhibition in their department, and, of course, they do it conscientiously. They look at the Fertilizer, of which they *know nothing*, save by the *certificate* offered by the *exhibitor*, and, of course, merely say, from the best light they have before them, they think it a good manure.

But here is an evidence clipped from a Charleston paper—editorially done up. How this opinion, really worth nothing, can be worked up to be worth a good deal to the manufacturer!

"Rhodes' Super-Phosphate.—This standard manure is attaining a position which is only equalled by Peruvian Guano, and, from present indications, would seem to be absorbing this powerful stimulant, more especially in the culture of cotton, for which it is meeting with general favor.

"The Rhodes' Manure has received the endorsement of the South Carolina State Agricultural Society; also the Southern Central Agricultural Society of Georgia; and we have the pleasure of making an extract from report of Committee on Chemical Manufactures, made to the Alabama State Agricultural Society, at their fifth annual exhibition, held at Montgomery, November, 15th, 16th, 17th, 18th, 1859:

"We, the Committee, having examined Rhodes' Superphosphate, and also the testimonials furnished by gentlemen of high respectability in South Carolina, beg leave to make a favorable report.

Dr. J. S. Weatherly,
Dr. C. Bellinger, } Committee.
Dr. V. H. Taliafero.

"As our readers are aware, Messrs. Rhett & Robson, of Charleston, are sole agents for South Carolina. We deem it but necessary to refer planters to the large stock of the manure now on hand and receiving by this house."

I heard a member of the Committee of the South Carolina Agricultural Society, who examined the Superphosphate, say he knew nothing about it, and he never would have signed the report, if he had thought it would have gone out as an endorsement; although there was really not a word said in its favor, only so far as it had been represented by others, in the certificates submitted by the manufacturer; and yet, the manufacturer modestly says, endorsed by the South Carolina State Agricultural Society.

I am glad to see you taking a stand for us, Mr. Editor, and if you do lose advertisements, or secure against your paper the opposition of Humbuggers, I hope you may be sustained by the gratitude and patronage of those for whom you labor.

Many people think a paper cannot be sustained without humbug. I think the experiment worth trying. But I am spinning a long yarn, for one who is not in the habit. I promised my experiment, I believe.

I have just cut my wheat, and here are the results:

Sec. 1. No manure—after corn—clay soil—brown mulatto land.

Sec. 2. After corn, (same field,) applied Rhodes' Superphosphate, 150 to 200lbs per acre; could see no difference in the wheat, either by the eye, or in harvesting it.

Sec. 3. Sandy land, although same field; Peruvian Guano and Plaster Paris; wheat a little better, but nothing remarkable—not near as good as I have made on same section, with 20 bushs. cotton seed to the acre.

Sec. 4. After corn—stiff, tenacious clay soil—but sometimes produces fine wheat—applied Peruvian Guano and Plaster of Paris, about 100lbs per acre, Guano.

Sec. 5. Rhodes' Superphosphate—land of same variety, but stretching over a greater breath of sandy soil—could see no benefit from the manure in either section. Some portions of the Guanoed part seemed rather the best.

Sec. 6. After corn—good wheat soil, ditched round and drained—wheat sown in drills—part Guano and Superphosphate, ½ and ½—part Guano alone—could discover no difference in favor of the Superphosphate and Guano sections.

There, now, sir, is a plain, unvarnished statement of my experiments, as far as they have gone this year.

I am trying guano and Superphosphates on cotton and corn, and you shall have the results as near as I am able to collect them.

One of my neighbors tells me that he was led, last year, to try Phosphate as a preventive of *rust* in cotton, but that was a failure, for that cotton had as much rust as ever, and he could see no benefit from the Superphosphate as a manure. It is very natural that the manufacturer should only publish his side of the argument; but it is the duty of the planter to publish his, for the good of his fellow laborer.

M. R. O.

For the Farmer and Planter.

Mr. Editor:—Much obliged to you for that Turnip-seed premium offered. I just was thinking where I would get some good seed, when I came across it, and if you will take this package and fork up, may be I may draw on you again.

Yours, &c., A. P.

Concrete Floors.—The lower floors of all the cellars of houses should be composed of a bed of concrete, about three inches thick. This would tend to render them dry and more healthy, and at the same time prevent rats from burrowing under the walls from the outside, and coming up under the floors—the method pursued by these vermin where houses are erected on a sandy soil. This concrete should be made of washed gravel and hydraulic cement.—The common mortar, mixed with pounded brick and washed gravel, makes a concrete for floors nearly as good as that formed with hydraulic cement. Such floors become very hard, and are much cheaper than those of brick or flag-stone.

A Cure for Scratches in Horses.—I send you the following receipt, which I have often seen tried with the most satisfactory results:

Procure some lamp oil, add a little white lead, and mix both together until the oil assumes a light straw color. When the horse comes in at night, his legs should be washed perfectly clean, and rubbed perfectly dry. Then apply the mixture, rubbing it well to the skin. Two or three applications are sufficient to effect a perfect cure, no matter how bad the case may be.—*Country Gent.*

From the Charleston Courier.

MESSRS. EDITORS :—We hand for publication a report from Prof. Liebig, of Baltimore, on Rhodes' Super-phosphate of Lime, which will be found of interest to those who have used it, as correcting some erroneous impressions, and also giving some suggestions as to its mode of application.

The extensive use of Guano and Artificial Fertilizers, and the worthlessness of many, renders it necessary that the planting interest should be protected against imposition, and secured in getting them of the uniform quality and standard they are represented to be. This can only be done by subjecting samples, taken indiscriminately from parcels, after arrival here, to analysis by chemists of established reputation *here* and elsewhere. This report fully confirms that of Prof. Sheppard, published some time since, from samples taken from the same lot of 1500 barrels in our warehouse.

Respectfully,
RHETT & ROBSON.

BALTIMORE, 67 S. Gay-street,
April 13, 1860.

REPORT OF ANALYSIS OF RHODES' SUPER-PHOSPHATE, FOR MESSRS. RHETT & ROBSON, CHARLESTON, S. C.

A sample of the above, averaged from a lot of 1500 barrels, was sent at my office, and found, upon analysis, to be composed as follows :

Sulphuric Acid	26.58
Lime	22.12
Phosphoric Acid	20.33
Phosphate of Iron and Alumina	0.61
Chloride of Natrium	0.41
Water, chemically combined	18.59
Water, as moisture	5.76
Sand and Carbon	5.60
	100.00

Which constituents are combined as follows :

Bi-Phosphate of Lime		14.70
Containing of Phosphoric Acid	8.92	
Containing of Lime	3.52	
Containing of Water	2.26	
Free Phosphoric Acid		15.79
Containing of Phosphoric Acid	11.41	
Containing of Water	4.38	
Sulphate of Lime Hydrated		57.13
Containing of Sulphuric Acid	26.58	
Containing of Lime	18.60	
Containing of Water	11.95	
Phosphate of Iron and Alumina		0.61
Chloride of Natrium		0.41
Sand and Animal Carbon		5.60
Moisture		5.76
		100.00

The free Phosphoric Acid in this article amounting to 11.41 per cent. is equal to 18.80 per cent. of Super-phosphate of Lime, rendering the whole amount to thirty-three and-a-half per cent. of Super-phosphate of Lime.

These numerals speak for themselves, and show that this article represents the most concentrated Super-Phosphate, manufactured from bones, which is the most reliable and uniform source for Phosphoric Acid. The well deserved name "*Standard*," which the Super-Phosphate has attained since its first introduction to its present position is owing to its great uniformity.

The results, which I have obtained by analyzing many samples, either sent to me from different sources or drawn by myself from the different agencies, and indeed from the factory itself, correspond so nearly or are within such limits as only can be maintained by the greatest possible care and attention in the management of so large an establishment.

In a sample, which I took warm and smoking from the workmen of this establishment, not waiting for the usual drying process, I found the amount of Super-phosphate to be 26 per cent. (26.) This is the lowest of all samples which I have analyzed.

The large increase in the consumption of this article, and consequently the increasing demand, has made necessary the building of a second mammoth series of Old Vitriol apparatus, which is indeed the best proof of the value of this fertilizer.

I have observed, in a Southern paper, that the water determination has given rise to attack and suspicion of adulteration. One, who is not acquainted with chemical formulas, might well be surprised by the apparently high per centage of water.

We will only remark, that they must make a distinction between chemically combined and mechanically mixed water.

The Super-Phosphate of Lime belongs to that class of salts whose very existence is dependent on a certain per centage of water, chemically combined. It is impossible to produce this salt with less than 15.38 per cent. of water in a chemically pure state.

The driving of the water, which is only possible by calcining at a high heat, would totally alter the nature of the salt, by forming a glass, consequently cease to be a Soluble Super-Phosphate of Lime, therefore, the advantage gained by treating bones with Sulphuric Acid, would be entirely lost. (See Berzelius' Chemistry, page 407, vol. 3.)

All finely powdered substances are hygroscopic : that is, they draw with avidity moisture from the air, therefore every finely powdered Bi-Phosphate of Lime coming dry from the factory will absorb water from the air, and cannot be found with less than four per cent. of hygroscopic water.

I do not think it inappropriate here, to say to you a few words in regard to the application of these manures. The English and Belgians sow but one-third the quantity of Super-Phosphate intended for a field, and spread the other two-thirds when the plants are beginning to sprout, or when they have appeared above the surface. The advantage to be derived from this method is two-fold. First, The exposed Super-Phosphate being in contact with the atmospheric air, will have much greater opportunity of absorbing Ammonia from it. Second, Rain and dew dissolving the Super-Phosphate, it descends below the surface, and none of this valuable Fertilizer will be lost, as the fine fibres are ready to absorb it by this time. I feel convinced that no farmer, desirous of improving his land and increasing his crops, ought to be afraid of the trouble to make at least a trial in this method of applying this invaluable Manure.

G. A. LIEBIG, Ph. D.,
Successor to Dr. CHS. BICKELL.

IT is exceedingly bad husbandry to harrow up the feelings of your wife.

Horticultural and Pomological.

WILLIAM SUMMER, EDITOR.

MONTHLY TALK WITH OUR READERS.

The orchard, with its varied fruits, yields its rich repast, and you feel that you are repaid for the care bestowed. Gather up the waste fruit daily that may drop from the trees, especially if in gardens where the pigs cannot consume it as it drops. Early varieties of the grape will ripen this month, and there are now so many choice varieties, that we hope every one who has a small place will have their own vine.

During this month very little sowing or planting can be done, but the garden requires constant attention. The soil should be frequently stirred, and the ground kept clean of weeds. Don't spare the hoe, but use it freely, and daily, if necessery, until you have exterminated every weed within your garden; do not permit any to go to seed, but as they are taken up make a pile in some corner, and with a little lime or ashes, you will form a rich compost heap that will be of great use to future crops.

Cabbages, and such other vegetables as may require it, should now be regularly hoed; and do not forget that when vegetation is in a forward state, that by keeping the earth open and free to the operations of the atmosphere, you greatly promote their growth. Sow a few Early York, and other choice early varieties of Cabbages, the close of this month. They will form fine heads in the fall, and a few may be selected to remain for making seed, where it is desired to do so.

Sow *Early Flat Turnips* for early use—the Strap Leaf is the best variety. Sow Early Purple Top to succeed them, and at the close of the month, put in a few of your table varieties. Yellow Finland, Robson's Golden Ball, White Norfolk, Large Flat Dutch and White Globe are among the best. The principal crop of these should be deferred for next month.—Ruta-bagas should be put in, if possible, by the 20th. Give the land a dressing of 250lbs super-phosphate to the acre, and you will succeed. Guano and super-phosphate give the plants a quick growth, and prevents the depredations of the turnip fly. As soon as they advance into the rough leaf they are safe from the ravages of the fly. In the absence of this give a good dressing of ashes and gypsum.

Sow tender varieties of the *Radish*, until the white and black Spanish comes in for use.

A few *Irish Potatoes* may be planted. They will be fit for use in October. We have found, next to super-phosphate, gypsum one of the best fertilizers for this crop.

Melons are in perfection this month, and are wholesome and agreeable to all tastes.

Cucumbers may be planted for pickling and table use.

Strawberry beds should be cleared of grass and weeds. A little attention will save you trouble in the spring. Clean off the Asparagus beds.

Look also to your *Orchards*. See that the trunks and limbs of your apple-trees are in a clean and healthy condition. If the bark is rough, or there is any sign of canker, clean out all the affected parts, and apply equal parts of whale oil and soft soap. It will be found a capital preventive against canker worm, and the ravages of insects generally. Cut out all bruised or dead limbs. Budding generally may be performed this month.

For the Farmer and Planter.

CULTURE OF IRISH POTATOES

Mr. Editor:—In a former issue of the *Farmer and Planter*, I noticed a call for experiments in all matters pertaining to agriculture and kindred pursuits, and permit me, an appreciating subscriber, to offer a hint or two on the *culture of the Irish Potato*, or, rather, the result of a few experiments, after trying different kinds of manures. For the sake of my own interest, curiosity as much as anything else, prompted me to experiment in that branch of gardening, being a great lover of that dish. I had a square reserved solely for the purpose of experimenting, and to ascertain, if possible, the best and most reliable manure for the *round* potato. In the first place, I had the land well prepared and thoroughly pulverized, on the 28th of February; I then furrowed it off three feet apart, and sprinkled some Peruvian Guano along the bottom of the drill—here it will be necessary to use some discretion in regard to the quantity of guano sown, as I was not particular enough to note the amount. In the second place, I had a load of half rotted wheat chaff hauled from the lot near the spot, sometime previous to the month of February, and sprinkled the same along the drill, on the top of the Guano. I then cut the potatoes in from two to four peices (according to size), and dropped them along in the drill, on the wheat chaff, from twelve to eighteen inches apart. I then procured some hog hair that had been thrown away the previous winter as being worthless (like too many other good things are wasted), and dropped a small handful on each piece of the potatoe, which lasted for three rows, and a few hills in the fourth; the balance had to put up with the Guano and chaff alone, except the three last rows, which I honored with a light sprinkling of half rotted cotton-seed, and then covered them all up with a weeding hoe, from two to four inches deep, and brushed off all the largest

clods, &c., into the middle of the row, and then covered them all over with wheat straw—it being handier than pine-straw where I live. In point of economy I will recommend the pine straw to be thrown over the beds, from three to five inches deep, and left there to await the result. And this is June now, and of course it is high time we were grabbling into and testing them, to some extent; and, by the way, I have been eating some very fine ones for the last week or two, the largest about the size of a goose egg. The finest were taken from the rows where the hog hair had been placed—and I assure you there is a decided difference between the three rows and a half and the others, in regard to the size of the tops, color of the leaves, &c.—they being more of a dark green than the others, showing plainly a *marked* advantage, up to the last hill, where the hair gave out. Now, whether it is the oil in the hair, or what it is, that makes this difference, I do not pretend to say, but others may judge for themselves. Should you think the above worthy of an insertion in your excellent journal, it is at your service; if not, just pass it by unnoticed.

Yours, truly,

Flat Rock, S. C. A. J. H * * * *

For the Farmer and Planter.

BEE HIVES AND SHEDS.

Mr. Editor:—As I have a little more time than when I last wrote, I will now give you my mode of keeping bees. I do not say it is the best, but it will do very well where there is no better to be procured. I make a hive 2 feet long 10 inches square, I cover the top with a board 12 inches square, and make holes on the bottom, the shape of a V, for the egress and ingress of the bees. I make a shed about ten feet wide, east and west, about 20 feet long, north and south, and from 7 to 8 feet high. I then have a bench 3 feet high, running from north to south, the entire length of the shed; it does not do well to have your shed too wide, as it keeps the sun too much from the bees. If they have sun from sun-rise until 9 or 10 o'clock in the morning, that does very well; then again in the afternoon from 3 o'clock to sunset. Turn the holes that the bees go in at to the east, close up the north and north-west side, in winter, so that you can move it in summer. Allow no rain to wet your hives.

Mr. Editor, as you thought my mode of taking honey worthy a place in your columns, I send you my mode of keeping the bees, which you can publish if you deem it worthy. By the way, my bees usually turn out 2 swarms. I get from six to seven pounds of good honey.

Respectfully submitted,

OVERSEER.

DOMESTIC LABOR HONORABLE.

Housekeeping is too often considered a mere drudgery, and domestic labor a kind of service to be performed only by the uneducated and uncultivated.—A greater mistake could not be made, nor one more disastrous to true happiness and family comfort.—Puddings and pies, bread. butter and cheese, and all the *et ceteras* of dinner-pot, oven and roaster, have much more to do with the enjoyment of those who gather around the same table, beneath the same protecting roof, than is generally believed.

Any young lady who ventures to assume the duties of wife and house-keeper, without knowing how to make good bread, or attend to the various preparations for the table, which are necessary in every family, is taking a leap in the dark. She is ruining her own happiness, and the happiness of him whom she has promised to love and honor. No one who has lived in a well-ordered home, can be happy in exchanging it for one where sour or heavy bread is the order of the day—where biscuits are yellow with saleratus, or heavy for the want of it—where the beef-steak is "fried to a chip" in boiling fat, instead of being nicely broiled on a gridiron—where everything which a husband provides is ruined in the cooking, and rendered as unhealthy and disagreeable as it can well be made. Love, under such circumstances, will almost surely become fretful, if no worse calamity befalls; and his torch, instead of burning clearer and brighter, as it always should do, will gradually grow pale and sickly, and flicker like a dying candle in its socket.

The domestic education of our young ladies is too much neglected. They are taught French, music and drawing, and after a few years at boarding-school, return home, too often with the idea that they are highly educated and accomplished, and have nothing more to learn. The work which they deemed finished, is scarcely begun. Such attainments are by no means to be undervalued. I would not have them know less of these branches of knowledge. French and German are so much spoken in our country, by multitudes who have emigrated to our shores, that it is desirable to be able to converse in these languages, even if we never travel in Europe, or read the great authors of those nations in their mother tongue. Music and drawing refine the mind, and both may be made of practical benefit in the management of a family of little folks. I have heard of a mother, who, when her children were restless and uneasy, would soothe and quiet them, and, like David, charm away the evil spirit by music. She would sing in a low and pleasant measure, some story, which would have an interest in itself, and an additional interest from the peculiar manner of reciting it. Children are always amused by drawing, and a mother who can instruct and assist them, need not consider the time wasted, which she has spent in acquiring the skill to do so.

But French, music and drawing, nor any mere book education, cannot take the place of a practical acquaintance with the daily duties of the household. Anything worth doing at all, it is often said, is worth doing well. There is a right way and a wrong way in washing dishes, and in sweeping floors and carpets, as well as in the fitting of a dress, or the conjugating of a verb; and it is just as important your dishes should be properly washed, as that your dress should fit neatly and smoothly.

It is the spirit with which any labor is performed,

that makes it degrading or elevating. I always look with feelings of the truest respect upon one who arranges her household cares with ability, who presides calmly, decisively and lovingly, over those who may be under her direction, and who brings order out of confusion, and keeps it in the ascendant, She may be ignorant of books—she may know nothing of style or fashion, but she is a noble woman, and she has a character far superior to many whose advantages have greatly exceeded hers.

"Act well your part," in whatever sphere of life you are placed, "there all the honor lies." Do not look upon anything which you can do to add to the comfort of your family, as beneath, or unworthy your attention. Remember that hands were made to use, not to be looked at, or for mere pegs for the suspension of jewelry.

Let your heart be in your work, and do it cheerfully, not grudgingly, and every one whose respect is worth having, will regard you as you deserve.—Domestic labor is no disgrace to the wealthiest and fairest lady that ever walked on our beautiful earth.

From the Rural Register.

WINES AND WINE-MAKING.

In a late work on Chemistry, by the celebrated Dr. Lardner, are the following interesting details:

"All sorts of grapes are not equally suited for the production of wine. The Chasselas Grape of Fontainebleau, so delicious an article of dessert, is quite incapable of yielding portable wine. Grapes, fit for the production of wine, should be ripened in a position which will insure to them a warm, constant, and regular temperature. The soil should have a mixed character, partly silicious and partly argillaceous. Old vines, *cætaris paribus*, give better wines than younger ones.

"Many constituents are involved in the composition of the grape, all of which affect directly or indirectly the quality of the wine it produces. These are principally water, glucose or grape sugar, pectic acid, tannin, albumen, a peculiar ferment which produces the spontaneous alcoholic fermentation of the glucose; several nitrogenous compounds soluble in water, alcoholic, essential oils, coloring compounds, blue, red, and yellow; which being differently durable cause the color of the wine to vary with time from violet to red, orange, and tawny yellow; fatty compounds, one of which forms œnanthic ether, which imparts to the wine its peculiar *bouquet;* pectates and pectinates of lime, soda and potash; tartrates and paratartrates of potash, lime and alumina; chlorides of potassium and sodium, phosphate of lime, oxyd of iron and silica.

"The quality of wine depends much on the conditisn under which the vintage takes place. The fruit should be fully ripe, the weather dry and cloudless. The grapes collected in baskets are transferred to barrels or troughs, in which they are first pressed by rakes, or trodden by men's feet, but this must not be done subject to a high temperature, since in that case premature fermentation would ensue.

"If it be desired to make white wine, the pulp is immediately submitted to the wine-press. If, on the contrary, red wine be desired, the pulp is left to itself for several days, so that fermentation may commence, and that the liquor may dissolve the coloring matter and tannin contained in the skin and stalks. In the fabrication of wines of the finer sorts, the grapes are picked and the coarser parts of the stalks removed, especially in seasons when the bunches are less rich in fruit. The troughs in which the first fermentation takes place are left open for the free escape of the carbonic acid. The duration of this process varies with the temperature of the weather and the nature of the grape. It is considered to be terminated when the evolution of gas ceases, and when the wine has acquired a suitable color. In the ordinary wines its duration varies from three to eight days, but it sometimes continues from four to six weeks.

"When the fermentation has ceased, the clear liquor is discharged by a cock provided for the purpose, and the marc mixed with a small quantity of water is again submitted to the press, by which a weak wine is obtained which easily sours.

"The wine is then transferred into barrels, which, for a certain time, are left open to allow the escape of the carbonic acid evolved in the process of fermentation, which has not as yet altogether ceased. When it has ceased the wine is again drawn off, and towards the months of March and April, it undergoes the process of *clearing*, which is effected by the white of an egg, ox blood, or gelatine. These substances enter into combination with the tannin, with part of the coloring matter, and in their coagulation carry away the matter which, being held in suspension, render the wine turbid.

"*Sparkling wines*, such as champagne, are prepared from the Black Grapes of the best quality, the juice of which is sweeter than that of the White Grape. The fruit collected in warm weather is carefully transferred to the wine-press, where, by a gentle pressure, the first portions of juice are extracted, without tearing or bruising the skin or stalks, which would impart a color to the liquor. This gives wine of the first quality. The marc is then submitted to a more severe pressure, giving a juice by which a pinkish-colored wine is obtained of less estecmed quality. A third or fourth repetition of this process gives inferior wines, which are usually mixed with common red wines to flavor them.

"The liquors thus produced are then left to a tumultuous fermentation in large barrels, where they disembarrass themselves of a great quantity of their ferment, which collects in froth at the surface. After about 24 hours, the liquor is drawn off into other barrels, which are nearly filled and imperfectly closed, so as to leave openings for the escape of the carbonic acid which still continues to be evolved.—A month later the liquor is drawn off and cleared.—The same process is again twice repeated, at intervals of a month, until, at length, the wine is bottled, in which process from three to five per cent. of sugar-candy, dissolved in its own weight of water, is added to it. The bottles are corked and wired with the greatest care, and laid in rows on their sides. A part of the sugar-candy undergoes alcoholic fermentation, under the influence of the ferment which still exists in the wine; but the carbonic acid evolved in this process, not having any means of escape, remains in solution in the liquor, and the unfermented part of the sugar-candy imparts to the wine its characteristic sweetness. When the bottles are uncorked, the carbonic acid, which is thus dissolved in the wine, being released from the confining pressure, escapes, arising in bubbles through the liquor, and producing the sparkling and foaming effects which are familiar to champagne drinkers."

SHADE FOR SHRUBS.

The ravages made by insects among flowering shrubs, especially roses, and the difficulty of finding any effectual means of prevention, have naturally much discouraged the planting of such shrubs in localities where this evil is most prevalent; for their cost, though moderate enough, if the plants were pretty sure to live and flourish, is yet too great to tempt many, who would otherwise be purchasers, to run the risk of their destruction by bugs, blight, or other cause. Even in regions yet unvisited by these plagues, reports of their havoc in other districts are likely to make amateur florists timid about undertaking, at the necessary outlay of trouble and expense, the culture of shrubs so liable to destructive attacks.

Without knowing anything of the comparative success of flowering shrubs in countries having a moister climate and a less ardent sun than our own—but having observed how much better fruit-bearing shrubs do when shaded during a part of the day by trees, fences, or other screen, than when exposed to the full blaze of the sun from morning till night, I have thought that perhaps a partially shaded situation might have its advantages for ornamental shrubs also. Persons of any experience in picking raspberries and blackberries, cannot have failed to notice that the largest, finest, sweetest fruit, is found on bushes or branches not fully exposed to the sun, while that which grows on the topmost branches, and without any friendly over-hanging tree or other shield from the sun's scorching rays, is apt to be small, dry, and shrunken. Now, if shade is so beneficial to fruit-bearing shrubs, why may it not be to flowering ones also? If our fierce, American sun, hinders fruits reaching their fulness of size, flavor, and texture, why may it not also prevent flowers attaining their perfection of bloom?

Another possible benefit to flowering shrubs, from being planted in a somewhat shaded situation, the suggestion of which is the object of this article, is their greater exemption from the attacks of destructive insects. Is it not true, that pestiferous bugs and worms are more likely to visit, with their fatal ravages, shrubs which stand fully exposed to the heat of a scorching sun, than such as grow in a cooler, more tempered situation? Information on this point will be very welcome. Meanwhile, for persons setting out flowering shrubs the coming spring, there can be little risk in trying the experiment of planting them among their shade trees, or in other like situations, taking care to place them where they will have sunshine enough to bring the blossoms to their full size and their perfection of color. The result of the trial may be larger, handsomer flowers, and at least partial immunity from the attacks of hostile insects. A.

South Livonia, N. Y., 1860.

GARDENS, AND THEIR INFLUENCE ON CIVILIZATION.

In the construction of man, there is, as it were, a kind of inner world of feelings, or senses, to be acted on, or excited by a relation with the external world. The feeling or love of nature is early manifested; the rich coloring of a flower produces on a child a train of pleasing sensations. This should make us tender to the ancient minds, who, unguided by revelation, worshipped natural objects such as trees, springs, &c., &c.

It is to gratify the love of nature that man brings around him the varied vegetable forms that constitute the flower garden; the compensation is felt within—a kind of equivalent for the removal of society from communion with the *wilde*, or free nature.

There are few minds but are susceptible of being impressed by the contemplation of natural beauty; hence the pleasure felt among groups of exotic plants, presented in a well-stored and well-arranged garden. The mind is brought to admire the simplicity, the beauty, the grandeur, and the unity of the works of creation. The fact is fixed on perception, that every zone has its own peculiar characteristic forms of vegetable life, varied and various, but existing under one general plan, and bound together in one harmonious unity of design.

The evergreen northern flora cheers the wintry scene, possessing physiological characteristics and a kind of inner life that lives in spite of ice, and snow, and the freezing blasts of protracted winter.

In the temperate climate of South Carolina, the Arbor-vitæ, Magnolia and Gardenia, will grow side by side. The mind trained to comprehend nature, can in these distinguish the differences in the vital developments of Northern and Southern organic vegetable being.

The garden, the park, and the green-house present us with plants from many different geographical latitudes and different zones of elevation. Man can thus contemplate the productions of far-off regions, and enjoy, in imagination, the scenes of tropical wildes, free from the toil and danger of travel. In the progress of civilization, these means are multiplied, and must, of necessity, produce an equal amount of influence on the mind for the study of nature. The Orinoco—that great drain of tropical America—will ere long be explored, and its peculiar floral productions will swell the catalogue of interesting vegetable being, and show the abundant development of vegetable life in climes where a daily perpendicular sun gives force and energy to the phenomena of life, producing such rank luxuriance as to create a struggle for light and air, and where one huge tree bears up a dozen climbers and parasitic plants, with leaves and flowers and fruits of every form and color. These new objects will add to the physiognomy of nature, and the increased reflections will swell the mental activity, enlarge the domain of the inner world, and thus refine the feelings of mankind, exerting marked influences on civilization.

Every garden is a volume of nature's poetry.—The grouping of tree, shrub and plant, calls the inventive genius of man into activity. Science, poetry, painting, artistic skill, and all that belongs to the idealizing mental power of man, are brought into play to produce perfection of effect in the imitation of rural nature, in shade, solitude, freshness and luxuriance, to, as it were, delude the senses into pleasurable enjoyment, as if contemplating the wilde of free nature.

The flower garden produces an effect on minds susceptible of impressions of natural beauty, and often gives to the young mind its leading direction, influencing after life. The sight of a tropical plant or tree, with the peculiar characteristics so prominent in these tropical organisms, begets in the mind an irresistible desire to comprehend not only these characters, but also to enquire into the climate laws that govern, physiologically, all tropical vegetation.

In this way, the flower garden influences civiliza-

tion; the mind that, during the relaxation from the stern duties of life, is thus engaged, is most assuredly progressing in humanities, elevating the moral feelings to legitimate position; the study of the laws of life, makes special impressions, naturally expanding into generalizations, and thus is the mind improved and its existence enlarged, laying the foundation of a profound sentiment of a love of nature, with upward tendencies towards the great Author of all.

MANURING FRUIT TREES.

Do not apply stimulating manures, like guano, to fruit trees during the spring or summer. If at any time, choose the fall or early winter, when guano may be applied by those who desire it, and before the young spongioles start in the spring the guano will be disseminated through the soil, and will not injure the young roots, as it surely will in early spring or summer. Fruit trees do not require either barn-yard manures or guano, but a full supply of inorganic food. Old mortar is an excellent fertilizer for apples, with occasional slight doses of wood ashes in summer, and phosphates in early spring. The lime and salt mixture, when properly made, so as to contain no free salt, may occasionally be given with profit. Each of the above may be applied in turn, but not at the same time. If top-dressed, they will find their way into the soil by dews and rains, and as they are volatile, no loss can occur from such a practice. Peach, plum, apricot and nectarine, are benefitted by decomposed swamp-muck, wood-earth, river-mud, etc., with slight quantities of phosphates and potash. Pears require phosphates in spring, and wood-ashes or diluted potash-water in summer, before the fruit is more than half size; this will insure the proper color and keep the trees in full vigor. Cherries alone will benefit by sparing and occasional doses, in early spring, of very dilute barn-yard liquor. The lime and salt mixture should never be used with cherries. Small doses of lime and potash will give them their chief inorganic requirements. Grapes want phosphates and potash, except at the time of summer rest, when both fruit and laterals cease for a time to grow; then water freely with liquid manures or guano water for four days, and follow with dilute potash water; this will push them past the summer rest, and insure a fine bloom with early ripening. A week in the time of ripening the Isabella may be thus gained. Blackberries, raspberries, and, indeed, all the brambles, are rank feeders, and require heavy doses of organic manures. These are among plants what hogs are among animals—they cannot be surfeited. Strawberries require phosphates, potash, soda and organic manures, and particularly such as will furnish tannic acid. A watering with bark-liquor, very dilute, benefits them materially near the time of fruiting.

HOW TO BUILD AN ICE-HOUSE.

Eds. Rural New Yorker:—Without attempting to persuade any of the importance of a judicious use of ice, or the pleasure to be drived from it during the warm weather, I will submit my plan for building an Ice-house.

The perfect success which I met in keeping ice last summer, I think, is owing largely to a new principle involved in the building; therefore, I speak of the plan for the consideration of those who are about to build for that purpose. Instead of one hollow wall for a non-conductor of heat, as in ordinary ice-houses, I have two, with a space *between* them, for *confined air*. The site is on a gravel slope. The foundation, for convenience in storing ice, is dug two feet below the surface of the ground. The outside wall for non-conducting material, is six inches in the clear. The inside wall is four inches, with a space for confined air of four inches. The doors for entrance correspond perfectly with the hollow walls in thickness, and are filled in the same manner—being shaped to shut with a bevel edge, like the door to safes used by merchants and bankers. At the lower side of the plates is a ceiling, upon which I put spent tan one foot thick, which tan is in direct connection with the side walls, so that any settling on the walls may be supplied from over-head. From the under side of the ceiling runs a ventilator, with a hole of one and a half inch bore, up through the roof, and is finished with an ornamental cap.

The room for ice is eight by ten feet in the clear, and eight feet high. Without a more minute description, I think the building will be understood.—If not, inquire further, any who wish to do so.—About all the waste of ice that I observed during the summer, was at the bottom; and this was so slow that we used the ice without regard to economy, for a large family, and in a dairy of thirty-five cows, beside giving freely to our neighbors.

I put sticks four inches thick in the bottom, to put ice on, and also some straw about the sides, as well as underneath the ice. Can you suggest how I can prevent water at the bottom? The ground is so porous as not to need draining, I think. I have thought of placing sticks cross-wise of those already in, so as to form an open space at the bottom. Will that do?

B. S. Carpenter.

Chemung Co., N. Y.

Remarks.—A quantity of brush, covered with straw, makes a good bottom, but is better if covered with boards; or, a bottom may be made of seantling and boards covered with straw. If the water does not drain off well, the ice will melt, and the same is the case if the warm air is permitted to enter. If a drain is made at the bottom it should be filled with stones.

MILDEW OF THE GRAPE.

Mr. E. S. Crozier, of Harrison Co., Indiana, writes for the *Ohio Cultivator* on the subject of the mildew of the grape as follows:

I am satisfied from observation, that the true cause of mildew is excessive moisture. The best test of the matter is, to try it in such a way that there can be no mistake. Col. J. L. Kintner, an intelligent farmer in this neighborhood, has built a protection of clap-boards like a roof, nailed upon posts, which are weather-boarded up behind. Last season, not a single bunch which was under cover rotted, while of those which were exposed, nearly all rotted. These very vines had become so addicted to mildew, that for several years they had been almost worthless. These vines were not only exposed to the full force of the sun, but received also the rays reflected from the weather-boarding. This certainly demonstrates the importance of having the grapes protected, not from the sun, but from the rain and the heavy dews. In every instance where Col. K. protects his vines, the fruit is excellent, with no

tendency whatever to rot. The reason that vines on the house grow so much better, and bear clear fruit, is sufficiently obvious. A branching vine had one of its branches fastened up to a stake, while the other was trained under the eaves of an ice-house.—While those on the stake all rotted, the ones on the ice-house were sound and excellent.

If any one has any misgivings upon the subject, the experiment can be made at a very little cost.—The fact that grapes succeed best in dry seasons, and on a dry soil, but confirms the truth of the statement I have just made, viz: *Protection from excessive moisture is a sure remedy for mildew.*

Wine-making.—After all that has been accomplished, there is an absurd idea prevalent that wine cannot be profitably raised in this country—that labor is too dear, and European competition great.—On the contrary, wine raising is at this instant the most profitable branch of agriculture in America.—It will pay from one to three hundred dollars an acre, yielding a higher profit on capital, skill and labor invested, than any other planting. The wines which can be most easily raised, are like those of Germany—light and very innocuous.

Summer Sours. Physiological research has fully established the fact that acids promote the separation of the bile from the blood, which is then passed from the system, thus preventing fevers, the prevailing disease of summer. All fevers are "bilious," that is, the bile is in the blood. Whatever is antagonistic of fever is cooling. It is a common saying that fruits are "cooling," and also berries of every description; it is because the acidity which they contain aids in separating the bile from the blood, that is, aids in purifying the blood. Hence the great yearnings for greens and lettuce and salads in the early spring, these being eaten with vinegar; hence, also, the taste for something sour, for lemonades, on an attack of fever.

But this being the case, it is easy to see, that we nullify the good effects of fruits and berries, in proportion as we eat them with sugar, or even sweet milk or cream. If we eat them in their natural state, fresh, ripe, perfect, it is almost impossible to eat too many, to eat enough to hurt us, especially if we eat them alone, not taking any liquid with them whatever. Hence, also, is buttermilk, or even common sour milk promotive of health in summer time. Sweet milk tends to biliousness in sedantry people; sour milk is antagonistic. The Greeks and Turks are passionately fond of sour milk. The shepherds use rennet, and the milk-dealers alum, to make it sour the sooner. Buttermilk acts like watermelons on the system.—*Hall's Journal.*

Peach Pickles.—One of the most delicious pickles ever tasted is made from *ripe* clingstone peaches. Take one gallon of good vinegar and add to it four pounds brown sugar, boil this for a few minutes, and skim off any scum that may rise. Then take clingstone peaches that are fully ripe, rub them with a flannel cloth to remove the down from them, and stick three or four cloves in each; put them into glass or earthen vessels, and pour the liquor upon them boiling hot. Cover them up, and let them stand in a cool place for a week or ten days, then pour off the liquor and boil it as before, after which return it boiling hot to the peaches, which should be carefully covered up and stored away for future use.

The Education Most Needed.—The idea too commonly prevails that a mere knowledge of books is the beginning and end of education. The sons and daughters, especially of the rich, grow up with this notion, in idleness as it were, with little idea of the responsibilities that await them. Their natures revolt at the mention of "labor," not dreaming that the parents before them obtained the wealth they are so proud of by industry and economy. How many young men, college-bred though they may be, are prepared to manage the estates which their fathers possess, and which it may have required a life-time to acquire? How many young women, though they have acquired all the knowledge and graces of the best schools, know how to do what their mothers have done before them, and which the daughters may be compelled to do at some period of their lives?

The children of the poor have to labor or starve, and as far as that goes they are educated to be practical. The education that scoffs at labor and encourages idleness, is the worst enemy for a girl, man or woman. Instead of ennobling, it degrades; it opens up the road to ruin. The education which directs us to do what we are fitted to do—that respects labor—that inculcates industry, honesty and fair dealing, and that strips us of selfishness, is the education we *do* need, and that which must become the prevailing system of the country before we can be a people either happy or prosperous.

Rope, Bagging, &c.—Southern Resources.—The following paragraph in relation to new Southern resources, we copy from the *Pieayune's* Baton Rouge correspondence:

"I must not forget to mention one of the greatest discoveries of the age, being the manufacturing of paper, all qualities, rope and bagging, etc., from the fibre of vegetable plants indigenous to the soil of Louisiana. Mr. Thomas J. Spear, of your city, claims to be the inventor of this remarkable discovery, and has produced here a number of specimens of paper, rope and hemp, made from the fibre of the bagasse, wild indigo, okra, banana, cotton plant and numerous other fibrous plants. It is proposed to put in operation a large manufacturing establishment in New Orleans for the making of paper, bagging and rope, etc., which, it is incontrovertibly ascertained, must soon supercede the use of East India gunny bags with our merchants and planters, while our press will become independent of the Northern paper mills. It is the policy of our State to encourage home manufacture by all means in its power, and aid and assist in rearing home manufacturing establishments of every description."

Stye on the Eyelid.—A correspondent sends us the following remedy, which she says she can vouch for:

Put a teaspoonful of black tea in a small bag; pour on it just enough boiling water to moisten it; then put it on the eye pretty warm. Keep it on all night; and in the morning the stye will most likely be gone; if not, a second application is certain to remove it.—*Exchange.*

Boiled Cracker Pudding.—Put four pounded crackers to a pint of new milk; add four eggs beaten to a froth, and a little salt. Tie it up in a floured cloth and allow a little for swelling; boil an hour. Eat with sweetened cream.

From the Rural Register.

THE MAN.

The weeds o'er ran the garden,
The weeds usurped the field,
For nothing but weeds and briars,
The idle land will yield,
When a burly man, upstepping,
A Man, I say—a Man!
Cried aloud, "I will amend this,
If a son of Adam can."
To say it was to do it,
When he had vowed his vow,
So, full of hearty action,
Himself he grasped the plough.

The neighbors flocked around him,
And gazed with purblind eyes,
Or lifted up their timid hands
In marvelous surprise.
Many there were who mocked him,
And a few there were who then
Went home with hearts uplifted,
Wiser and better men.
But the man wrought on undaunted,
Nor stint nor stay he knew,
Till, where the wild weeds flourished,
Fair grains and grasses grew.

The stubborn glebe he tilleth,
With an iron resolute will,
And the blossoms of the spring time,
The air with perfume fill.
The autumn brought the fruitage,
The corn, oil, and the wine,
And the man, he said, yet humbly,
"Lo! these good deeds are mine.
Though I have read but little,
Sure I have wrought the more,
And have made two blades of grass grow,
Where one blade grew before."

By brave words and stout labor,
His high success he taught,
And though his phrase was homely,
'Twas manhood spake and wrought;
And when his work was ended,
He laid calmly down to rest,
Full of years and reverend meekness,
With the sunshine on his breast.
And when flowers bloomed above him,
And time some years had won,
Men began to know and love him,
Through the good deeds he had done.

A Superior Desert.—Quarter and core a quantity of apples, put one layer into a deep pan, sprinkle over sugar and a little flour, lay on slices of bread, (toasted, if preferred,) sprinkle more sugar and cover with another layer of apples. Bake, and eat with sugar, or sweetened cream. A little nutmeg might be added, but spices are all more or less unhealthy.

To Stop Mouse Holes.—Stop mouse holes with plugs of common hard soap, and you will do it effectually. Rats, roaches and ants will not disregard it.

☞ Eloquence consists in feeling a truth yourself, and in making those who hear you feel it.

Sweetness of Home.—He who has no home, has not the pleasures of life; he feels not the endearments that cluster round that hallowed spot, to fill the void of his aching heart and while away his leisure moments in the sweetest joys. Is misfortune your lot? you will find a friendly welcome from hearts beating true to your own. The chosen partner of your toil has a smile of approbation when others have deserted, a hand to help when all others refuse, and a heart to feel your sorrows as her own. Perhaps a smiling cherub, with prattling glee and joyous laugh, will drive sorrows from your care-worn brow, and enclose it in wreaths of domestic bliss.

No matter how humble the home may be, how destitute its stores, or how poorly its inmates are clad, if true hearts dwell there, it is yet a home—a cheerful, prudent wife, obedient, affectionate children, will give their possessor more joy than gold and windy honor.

The home of the temperate and industrious will be his greatest joy. He comes to it "weary and worn," but the sound of the merry laugh and happy voice of childhood cheers him, and a plain but healthy meal awaits him. Envy, ambition and strife have no place there, and with a clear conscience, he lays his weary limbs down to rest in the bosom of his family, and under the protecting care of the poor man's friend and help.

Beautiful Extract.—You cannot go into the meadow and pluck up a single daisy by the roots, without breaking up a society of nice relations, and detecting a principle more extensive and refined than mere gravitation. The handful of earth that follows the finny roots of the little flower is replete with social elements. A little social circle has been formed around that germinating daisy. The sun-beam and dew-drop meet there, and the soft summer breeze came whispering through the tall grass to join the silent concert. The earth took them to the daisy gem; and all went to work to show that flower to the sun. Each mingled in the honey of its influence, and they nursed the "wee canny thing," with an aliment that made it grow. And when it lifted its eyes towards the sky they wove a soft carpet of grass for its feet. And the sun saw it through the green leaves, and smiled as he passed on; and by starlight and moonlight, they worked on. And the daisy lifted up its head, and, one morning, while the sun was looking, it put on its silver-rimmed diadem, and showed its yellow petals to the stars.

We Pass for What we Are.—A man passes for what he is worth. Very idle is all curiosity concerning other people's estimate of us, and all fear of remaining unknown is not less so. If a man knows that he can do anything—that he can do it better than any one else—he has a pledge of acknowledgment of that fact by all persons. The world is full of judgment days, and into every assemblage that a man enters, in every action that he attempts, he is gauged and stamped. In every troop of boys that whoop and run in each yard and square, a new comer is well and accurately weighed in the course of a few days, and stamped with his right number, as if he had undergone a formal trial of his strength, speed, and temper. A stranger comes from a distant school with a better dress, trinkets in his pockets, with airs and pretensions. An older boy says to himself, "we shall find him out to-morrow."

Domestic Economy, Recipes, &c.

For the Farmer and Planter.

To Make Brandy Plums.—Take the common Chickasaw Plums, just before ripe, steep in good whiskey 24 hours; next day boil a syrup of 1lb of sugar (white is best) to the piut, and while hot mix with the whiskey poured from the plums, in equal parts, and pour back upon the plums, just enough to cover them; cork them up for one month. This makes a very pleasant Brandy Preserve—much better than French Cherries—(*Cerises a l'eau de vie,*) and much cheaper. "C."

[Our friend has our thanks for the above; and we shall be pleased to recieve the recipes for making Brandy Peaches and Cherry Bounce, which he speaks so highly of.

Figs and Milk.—A friend informs us that, in the absence of Peaches, a most delectable dish can be enjoyed by taking ripe Figs, opening them aud puting milk and sugar on them, in the same manner as for that most luscious of all dishes, Peaches and milk.

Potato Rolls.—Take fine large potatoes. Boil, peel and mash them. Then rub the mashed potato through a sieve. To each potato allow a pint of sifted flour; a tablespoonful of strong, fresh yeast; a gill of milk-warm water; salt-spoon of salt; the yolk of an egg, and a bit of fresh butter about the size of a hickory nut. Mix together in a large, broad pan, the flour, the mashed potato and the salt. Make a hole in the centre of the mixture, and pour into it the yeast mixed with the warm water. Sprinkle a little flour over the top, and mix iu a little from round the sides of the hole. Cover it with a clean towel, and over that a flannel, and set it near the fire to rise. When the dough is quite light, and cracked all over the surface, knead in the butter and also the yolks of the eggs, having beaten them well, and add a small teaspoonful of soda dissolved in a little warm water. Then divide the dough into equal parts, make it into long-shaped rolls, and lay them in a tin or iron pan sprinkled with flour.—Cover them, and again set them to rise in a warm place. When perfectly light, (which should be in about an hour,) set the pan iuto the oven and bake the rolls brown. They are best when quite fresh.—Pull them open with your fingers, and eat them with butter.

Mead. This favorite beverage, that for centuries was the chief libation of northern nations, is made by dissolving one part of honey in three of boiling water, flavoring it with spices, and adding a portion of ground malt, and a piece of toast steeped in yeast, and allowing the whole to ferment.

Bread Omelet.—Put into a large tea cup of bread crumbs, a tea cup of cream, a spoonful of butter, with salt, pepper and nutmeg; when the bread has absorbed the cream, break in the eggs, beat them a little with the mixture, and fry like omelet.

Cholera-Infantum.—The *National Intelligencer*, at the request of a correspondent, publishes the following simple cure for cholera-infantum, cholera, diarrhœa, colic, and all diseases of the alimentary organs, generated in the summer season by the use of fruit, or otherwise. He says:

"I am as much opposed, as any allopathic or homœpathic physician can be, to any species of quackery or empiricism. This is the result of many years of positive persoual experience iu my own family—with myself, with my children, with my neighbors, and with my friends and acquaintances. It ought to be everywhere known. How many childreus' lives it will save if adopted! It is simply this: One-fourth of an ounce of pulverized cloves, one-fourth of an ounce of pulverized cinnamon, one-fourth of an ouuce of pulverized gum guaiacum; mixed with one pint of old and pure whiskey. "To be well shaken before taken." Dose for an adult—one-half of a wine-glass, or a large tablespoonful, filled up with water; for a child, proportionably.

It never fails. One siugle dose at the inception of any such disease, if not complicated with other maladies, will always, within an hour, cure. If such disease be chronic, or has run on for some time, then hourly or daily three or four times."

Recipe for Washing.—One gill of spirits of hartshorn; four oz. saltpetre; dissolve in two quarts of rain water, cork it tight in a jug. Put two tablespoonsful in a pint of soap; stir it through, make a suds, and put your clothes to soak over night, or in the morning before breakfast.

New Orleans Recipe for Curing Beef.—To 100 pounds of beef take 9lbs coarse salt, 4 oz. saltpetre, and 5lbs sugar. Pulverize the saltpetre and mix the ingredients thoroughly. Pack the beef with the mixture, pound it down, and put a weight upon it.

To Cure a Boil.—The skin of a boiled egg is the most efficacious remedy that can be applied to a boil. Peel it carefully, wet and apply it. It will relieve the soreness in a few hours.

Corn Cake.—Take corn meal and wet up with boiling water and butter milk, equal parts; make it thick as batter, and bake it in a hot oven for the breakfast. To be eaten hot.

Buns.—Three cups milk, one cup yeast, one cup sugar, and flour to make it a sponge; let it rise over night, then add another cup of sugar and oue of butter. Mould them into small biscuit.

Soda Sponge Cake.—One cup white sugar; 1 do. flour; 1 teaspoonful cream tartar; 1 do. soda; 1 do. salt; 1 do. essence lemon; whites of 6 eggs.

Fruit Cake.—One cup sugar; ½ do. butter; ½ do. water; 2 eggs; 1 teaspoonful cream tartar; ½ do. soda; cinnamon; nutmeg; citron 1 oz.; 2lbs raisins.

Jumbles.—Two cups sugar; 1 do. butter; ½ do. water; 3 eggs; 1 teaspoon cream tartar; ½ do. soda; nutmeg, flour sufficient to mix; roll thin.

Cup Cake.—One cup butter; 2 do. sugar; 1 do. water; 5 do. flour; 3 eggs; 1 teaspoon cream tartar; ½ do. soda; nutmeg.